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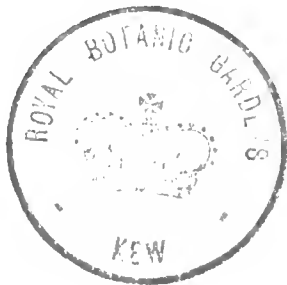
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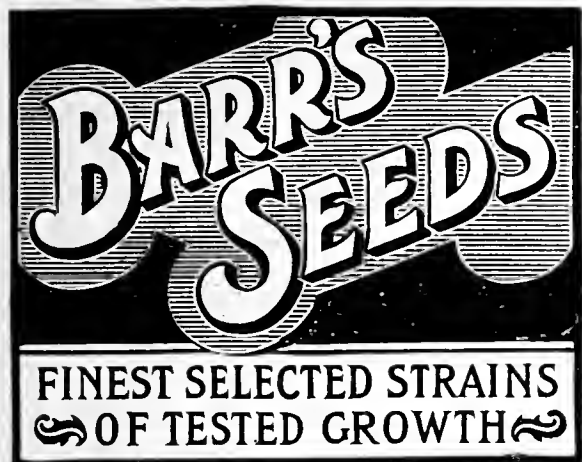
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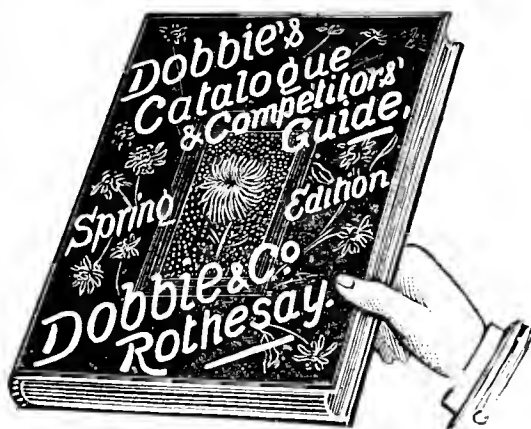
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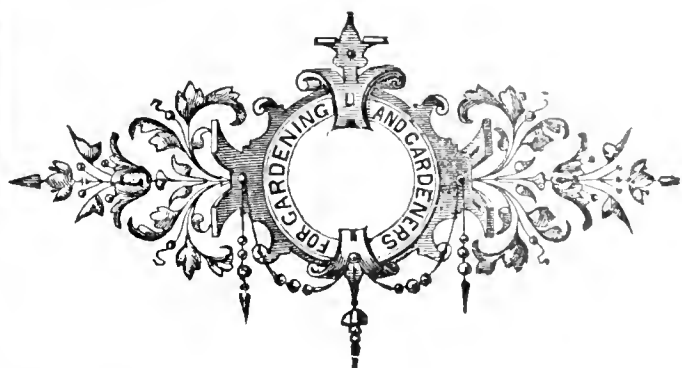
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Journal of Horticulture.

THURSDAY, JANUARY 5, 1899.

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NEW YEAR'S ADDRESS.

“WHAT, at it again?” I hear some cynical friend calling out; “I really think it is time that that old fellow left off and made room for others to take his place; his pen must be pretty well worn down to a stump, and his ink thick and muddy—thoroughly emblematic of his ideas.” Well, so I thought; but the Editor does not share my views, and using some flattering words, asked me once more to send a message to the ever increasing number of the readers of the Journal. So I have acceded to the request, the more readily as it has now well advanced upon the fiftieth year of its existence, during nearly forty of which I have been a regular contributor.

When I was meditating on this I saw some very cheering observations made in the pages of a contemporary, in which we were told that the number of successful contributors to gardening papers might be counted on the fingers of one hand! I could not even claim, then, to be a little finger, and must be content with whatever measure of praise or blame a considerate clientele may give me.

There is one difficulty in writing on the horticulture of the past year—that we have no startling events to record; nothing, for instance, like the Jubilee of her Majesty and the consequent installation of the Victoria medal for horticulture; and as it would be difficult to say anything of a country which has no annals, so equally difficult is it to record the doings of a science in which all seems to go on in a smooth regular course. There is, however, one subject which closely affects us all, and especially gardeners, and that subject is the weather.

Do you ever shake hands with a friend in the streets without his immediately saying to you, “A fine day,” or “Very cold,” or “Very damp,” or something relating to the state of the atmosphere?—a sure indication, as someone has said, of the uncertainty of our climate; and I think we may safely say that (in some parts of the country at any rate) gardeners have had a fearful time of it. We have experienced another year of drought, and

in many places the question of the supply of water for domestic uses even has altogether failed. Springs which were never before known to fail have given in; wells have become useless, and ponds dried up. So much so has this been the case that Lord Onslow had to leave his residence in the Surrey hills and come to his town house, because his supply of water had altogether failed.

What chance then has our poor plants had? To draw water even from a little distance adds much to a gardener's labours, but when it has to be fetched three, four, and five miles, it is clear the gardens must suffer much; and so it has been in this year of Grace 1898, but not in all parts of the country. The east and south have been the chief sufferers, and no better idea can be formed of the difference between various parts of the country than that afforded by the fact that during the three months—August, September, and October—the rainfall in S. Wales amounted to upwards of 15 inches, and in East Kent to 4 inches.

All through it has been a year of disappointments. Nothing lovelier than the appearance of the orchards in their blossoming time can possibly be imagined; the Plum and Cherry orchards with their snow-white garb, and the Apples with their pink-tinged flowers afforded a dream of beauty not to be forgotten. But alas! the promise was far greater than the performance. Everywhere we found the same complaints—Plums and Cherries a complete failure, while Pears and Apples were only a tithe of what they generally are, and the same was true about flowers.

The Rose gave promise in the earlier part of the year of a grand season. We had no frost or snow of any consequence, and everybody looked forward to an early blooming season; but there came a long spell of drought, accompanied with harsh winds, and the hopes of Rose growers were blighted. I take the National Rose Society as a pretty sure index. Its show at Bath was the smallest southern provincial show that was ever held, and the Crystal Palace was comparatively small in extent, and the one adjective that was used by Rose growers as to the season was that it was very disappointing.

The prolonged dry weather which we experienced in some parts of the country destroyed the hopes of those who look to the embellishment of their gardens by annuals; they could not grow, and consequently did not bloom. Those who had not gardens looked upon the season with very different eyes; the dry weather meant for them long tours on bicycles, pleasant afternoons at lawn tennis or croquet, and out-of-doors enjoyments of all sorts.

In reviewing the horticultural events of the past year our attention is, of course, first fixed on that which is the great centre of horticulture in these islands—the Royal Horticultural Society. Time was when this was a dangerous theme to touch upon; there were so many shoals, quicksands, and rocks ahead that it would have required no small amount of courage to venture into the stormy sea. Happily, all this is changed; its energies are now devoted to the interests of horticulture; its Council has only to think how best those interests may be promoted; it is composed of men thoroughly alive to this, and under the guidance of their able and genial Secretary (whose views are like theirs) they are continually putting forward some new schemes for the advancement of horticulture. It is true that there has been no such project before it as the most gracious one that they carried out last year in the establishment of the Victorian Medal for Horticulture, but they have added this year to the graciousness of their act by presenting each of the recipients with a diploma of honour.

The garden at Chiswick has been greatly improved, and though probably too much surrounded by houses to carry out its experiments and trials in as satisfactory a manner as might be wished, still there is much of interest in what is being done there. The fortnightly meetings in the Drill Hall have probably been better filled with plants, flowers, and fruit than any previous year, while the attendance has certainly been somewhat better.

The grand vision of a Horticultural Hall seems to have vanished into thin air. One felt that when the first effort, inaugurated by

Baron Schröder and other leading men, fell through, that it must be so, for the only available site was lost, and then those who advocated it in providing a hall hardly knew what they wanted, and so the Royal has been compelled to put up with a very indifferent place, with very inartistic surroundings. The National Chrysanthemum Society has to put up with that noisiest of all places, the Royal Aquarium; an attempt was made this year to remove the Chrysanthemum Society to the Crystal Palace, but the subscribers would not have it, and one sees that there are difficulties in the way. It is not an easy matter at any time to get garden produce up Sydenham Hill, but when it has to be accomplished in the depth of winter the task is made still more difficult and unpleasant.

The Crystal Palace, all the same, still holds its own as the place for exhibitions. Its light and protection from the elements combine in asserting its superiority, and under the new management it looks as if there would be improvement in every direction. There the National Rose Society held its grand exhibition; there, too, the National Dahlia Society gathered together a grand show, while the autumn exhibition of British grown fruit under the auspices of the Royal Horticultural Society, made its magnificent display, and there is every prospect of the year 1899 carrying forward its best traditions.

The Royal Botanic has made a strong bid for popular favour, but it does not seem as if that would be brilliantly successful. The National Carnation and Picotee Society has suffered loss by going there, and was this year removed to the Crystal Palace with manifest advantage. It is a great pity, for the gardens so ably laid out by Robert Marnock are yearly increasing in beauty.

Of course the palm of metropolitan exhibitions is carried off by the Royal Horticultural Society's show in the Temple Gardens. This was held as usual at the end of May, and was a great success in every point of view; the weather was very fine, and there was a magnificent display of plants and flowers of all kinds, and from all parts of the country. There is, it is true, little change from year to year, and one can pretty well tell before entering the ground, where the principal exhibits are to be seen. This is probably a necessity. There is, however, one point in which improvement might be made—viz., the setting up so many duplicates, and the consequent contraction of space for the more remarkable exhibits; it was also financially a success, and the resources of the Society have thereby been improved.

Though there have been no very startling novelties brought forward either in plants or flowers, the most remarkable plant has been *Acalypha Sanderi*. It was brought forward by the well known St. Albans firm; it is a greenhouse shrub, producing long crimson panicles in the axils of each leaf, reminding one very much of the old garden annual, *Love-lies-bleeding*. But doubts have been expressed as to its really being a novelty, it being said that it has already been introduced into our gardens under another name.

While I think we may take the awards of merit granted by the Royal Horticultural Society at their fortnightly meetings as comprising most of the best flowers of the year, this does not hold true in all cases, chiefly when there are especial societies for the culture of each particular flower. Take for example the Rose. As far as I can recollect no gold medal Rose has received an award at the Drill Hall; the raisers of new varieties will rather submit them to a committee of the National Rose Society, and their awards are highly prized. Messrs. Alexander Dickson & Sons of Newtownards have never exhibited any of their grand seedling Roses there. So, again, with Chrysanthemums. There are many of these flowers brought forward at the National Chrysanthemum Society's exhibitions which do not come before the Floral Committee of the R.H.S., the "certificate" given by that Society being more valued than an "award of merit" by the other.

The reason of this is not far to seek. The Floral Committee is composed of men many of whom know nothing of florists' flowers, while in the special societies already named the committee is composed of those who are experts in the flower on whose merits they

have to decide. The class of flower to which the greater number of "awards of merit" have been given follows the lines of the last few years. We have the Orchids, which may be called the rich man's flower; at the other end of the scale the Chrysanthemum, which is *par excellence* the flower of the poor man. The former can only be successfully cultivated by those who have a good staff of gardeners, while the veriest shanty can so well protect the Chrysanthemum that a cottager may grow and exhibit them, and, as I know, carry off prizes from those with much ampler means at their disposal.

In looking through the list, then, I find that "awards of merit" were given to seven Cypripediums, seventeen Cattleyas, ten Lælias, sixteen Lælio-Cattleyas, nineteen Odontoglossums, and seven Dendrobiums—in all sixty-nine, a pretty good record; and the question naturally arises, Are these all sufficiently distinct to justify the Committee in giving them these awards? In former days—and I am not sure it is not the same now—florists were roundly rated for considering various flowers distinct in which it was said no one but the raiser of it could have seen any difference. Botanists especially dealt very hard blows on us, and it is a grim satisfaction that they now are sorely perplexed as to what to do with the many new varieties resulting from cross-hybridisation. The same may be said with regard to Chrysanthemums. There are multitudes of flowers in which the difference between them and those already in cultivation is not easily distinguishable; but there are a few of remarkable merit, such as Lord Cromer and H. J. Jones, which promise novelty and brightness of colour, and will no doubt be generally acceptable and much used for exhibition. We have whites and yellows in abundance, and require something now to brighten up our stages and greenhouses.

There have been some striking additions in Cactus Dahlias, while Mr. Engleheart's Narcissus show how much can be done by a careful and painstaking hybridiser. The Gladiolus does not seem to receive so many awards as usual, although Mr. Kelway of Langport and Mr. Burrell of Cambridge have exhibited some striking novelties. When one sees the splendid collections shown by these gentlemen I was tempted to ask, "Why is not the flower more popular?" The only answer I think to this is that they entail a great deal of trouble if they are successfully cultivated, and also the fact that so many of them fail each year.

Neither do I think there is much to record in garden literature. The weekly periodicals seem to flourish, and I do not think anyone can say the Journal lags behind, and I think its Editor may well be satisfied with the high position it occupies amongst its fellows. We miss, it is true, the productions of many a facile writer, but then there are others who come forward to take their place. I cannot but think that many more of our younger men might train themselves in giving to the gardening world the results of their experience.

In general garden literature we have had but few additions. A chatty and pleasantly written book on Roses at Cannes has been given to the world by Lord Brougham and Vaux, who does not profess to give a new treatise on the culture of the Rose, but only to describe them as they grow in that favoured locality; and one reads with feelings akin to envy of the marvellous bushes and trees of Teas and Noisettes especially which there delight the cultivator if he can avail himself of the deep rich soil and sunny skies. It has, of course, its drawbacks; Hybrid Perpetuals are not such a joy there as they are with us; but during the spring months the Teas and Noisettes must afford a treat of which we can have no idea in our colder climate.

During the many years in which I have been permitted to send this message to the readers of the Journal, I never remember one in which the death roll has been so small. Many of those who have left us during the past year do not form such a blank in our daily life as was the case with some of those whose death we had to deplore in former years; in truth, the best known amongst them was Mr. James Bateman, whose death belongs really to last year, he having died on November 27th, 1897. He was for many years a conspicuous member of the Council of the R.H.S., the pioneer in the

more rational treatment of Orchids, of which he had a large collection at Biddulph Grange, and a ready speaker in all matters connected with horticulture. Mr. Pullham of Broxbourne, a man whose artistic tastes had been much called into requisition by those who were forming artificial rockeries in their gardens, while his successful arrangements at Battersea Park and other public gardens brought him into the prominent notice of the public. The name of M. Jean Linden, at Brussels, recalls to mind one of the most energetic and accomplished of foreign horticulturists. Many of our countrymen, like myself, have shared his hospitality, and know how great a loss his death is.

The Horticultural Club, which has now for so many years formed a bond of social union amongst horticulturists, both amateur and professional, has continued its useful career; its rooms afford a meeting place for societies of various kinds, while its monthly dinners and conversaziones have been greatly enjoyed and well attended, and the papers read and discussed at its meetings have been of a valuable character. Most of them have appeared in the gardening periodicals; it affords an opportunity also for welcoming foreign horticulturists, and in the coming year will be further utilised in welcoming those distinguished foreigners who may attend the conference on hybridising, inaugurated by the Royal Horticultural Society.

And now, my brothers and sisters—ought I not rather to say sons and daughters?—to whom our gentle craft has given so much pleasure in years past, suffer a word of encouragement from one who has, as he has often told, derived intense satisfaction and enjoyment from his flowers. Of course the enthusiasm of former years has cooled down, but still, in the evening of his long day, there is an immense amount of quiet enjoyment to be had. I say to you then, Go on and prosper; cultivate your gardens and enjoy your flowers without reference to medals, cups, pieces of plate, or money, and whether you go amongst your flowers when spring has contributed its beauties to your enjoyment, or summer has loaded you with its treasures of sight and perfume, or even when autumn has shattered your favourites, learn such lessons for your daily life as may the better fit you to be ready for that call which comes to us all, so that you may look forward to that Paradise of God which has been won for us by Him who is the Rose of Sharon and the Lily of the Valley.—D., Deal.

APPLES WORTH GROWING.

(Continued from page 434, December 8th, 1898.)

I MAY first mention that the garden is about 350 yards from the bank of the river Humber, and about five miles west of Hull. When there are high spring tides the bank is often covered with water. The garden slopes a little to the south. The formation is chalk. Between the chalk and the surface soil (of 5 to 8 inches in the fields) there is a bed of hard dull red hungry clay 6 to 8 feet thick—not an ideal soil for fruit culture, as will be admitted. The red clay of Nottinghamshire, where fruit does well, is of a bright red. To plant Apples here and give them the best of care afterwards will not give results equal to those from Apples planted in the Cray valley, Kent, and which practically receive no attention after the soil has been well worked before planting, and keeping it loose on the surface afterwards.

Most of our Apples are grown on bush trees—young trees bought from the nursery. Standards appear to be of little use in comparison. There is an orchard of standard trees at the farm about 300 yards from the garden. The trees have been neglected, and the varieties are inferior. Those trees do not half pay what would be a reasonable rent for the ground that they stand on. We grow some cordon Apples on the walls from maidens of the newer varieties. I have had orders from my employer to grub up all the Peach and Apricot trees growing on the walls through planting about forty cordon Apples two years ago, and to these are now added fifty Cox's Orange Pippins. In value the crops of Peaches and Apricots bear no comparison with that of the Apples.

When a young bush tree three years old is bought from the nursery its training is only then begun. After that the tree can either be ruined for fruit bearing, or made productive and valuable. See the notes from "Nurseryman" on page 452, December 15th, they are very true. Some of the bush trees here planted alongside the garden walks have grown to the height of 9 to 12 feet, with their centres open and

the branches thinly trained, some of these nearly extending across the path through pruning to outside buds. I keep all old worn-out spurs cut away.

VARIETIES OF DESSERT APPLES.

My object in writing the few notes on dessert Apples is partly to redeem from oblivion, if possible, some of the most delicious Apples that we have for private use. Others I have mentioned are good for market. The small varieties require superior culture to bring out their best qualities. The larger varieties will produce Apples of fair size for market without much trouble, but where is the quality? I know that ladies and gentlemen appreciate an Apple of good quality.

Cox's Orange Pippin.—Season, November to March. I should be glad to learn that there were being planted in every garden from one to a hundred trees of this splendid dessert Apple, either as bushes, standards, or cordons, according to locality and convenience at command for growing them well. If there is a space 18 inches wide on a good wall, plant a cordon Cox. You will be rewarded, only give the tree a chance at the roots. It is seldom that a good dish of this Apple comes from the dining-room table intact, though good Grapes are often untouched at dessert.

Culture of Cox's Orange Pippin.—Plant in a sheltered, yet sunny situation. If there is a depth of 18 inches of good soil, that will suffice. Have some turf or other fresh fertile soil mixed with about a sixth part of burnt garden refuse to plant with. Do not plant deeply, but somewhat near the surface. Stake at once, and mulch with half-decayed manure 2 or 3 inches thick. As the trees grow keep the branches thinly trained, and when they are bearing good crops of fruit give liquid manure at intervals throughout the year; also half a pound of basic slag to the square yard in November, or 1 lb. of superphosphate to 3 square yards in December or January, pointing-in 2 or 3 inches deep.

Ribston Pippin.—As a dessert variety for private use this old favourite is highly appreciated when well grown. I have found that liberal treatment serves to ward off mildew and canker, which is incited by starvation at the roots, plus negligence or mismanagement generally. Some years ago I took charge of an orchard that included two half-standard Ribston Pippins amongst its tenants. The trees were the reverse of satisfactory; the branches crossed each other and were covered with lichen and moss. The heads were thinned, the stems scraped and dressed with soot and lime, fine lime being also thrown amongst the smaller branches when they were wet; the roots were assisted by liberal supplies of liquid manure winter and summer. All the trees were similarly treated, but the Ribstons and a few others had a couple of light dressings of guano. The soil was only 8 or 9 inches deep on limestone. The second year great improvement was apparent all round; the third year the Apples were first-class for an orchard with thin soil. In the winter of the third season I sent in a dish of Ribstons for dessert. The dinner party included a gentleman possessing good knowledge of the Apples; but he said the name was not right, as the colour was too high for Ribston. I sent some of the Apples to the late Dr. Hogg for his opinion. His answer was, "The true Ribston, well cultivated." So much for generous treatment. The trees had been starved in the thin soil, and its resources wasted on a number of useless branches with a crowd of apologies for leaves. That was in Lincolnshire, a district not famed for fine Apples.

Golden Winter Pearmain.—This is, I think, the correct name of King of the Pippins. Season, November to January, or later. This appears to be a favourite Apple with many people. The fruit assumes a lovely colour under good cultivation, and though neither large nor rich sells well. The tree is a free, healthy, upright grower, and requires careful pruning to outside buds to cause the shoots to grow away from the centre. It is one of the most reliable when the branches are thinly disposed and worn-out spurs removed.

Worcester Pearmain.—Season, September to November. A popular variety because of its colour, but more so with market than private growers, for in quality there are many better varieties. I grow it for sale because buyers like it, and that is enough for me. The tree is not a large grower, but a regular bearer. It requires heavy feeding here, and bold healthy spurs for producing full-sized and well-coloured fruit.

Baumann's Red Winter Reinette.—Season, November to February. Another fair-sized, deeply coloured, and therefore popular market Apple. The tree is a good grower and bearer. It will look after itself, so to say, better than some others, but will well repay for the best cultural treatment. For home use I would not grow it either for dessert or cooking, but when we want other people's money we must consider other people's fancies, or we shall get very little in the market.

Lady Sudeley.—Season, September and October. One of the best early Apples, with size, colour, and flavour to recommend it, while the tree is a good grower and bearer. An excellent Apple for market and private use. The fruit has a greenish-yellow skin striped with red, and the flesh is tender and enjoyable under good culture. When

the trees are formed, thinning rather than shortening the branches, should be the rule in pruning.

Allington Pippin.—Season, November to January. A comparatively new Apple of fair size, fine appearance, and excellent quality. I think it originated in Lincolnshire from Cox's Orange Pippin. The tree is a good grower and bearer, and likely to be extensively planted for affording supplies of fruit both for the home dessert and market purposes.

Gravenstein.—Season, November to January. Why is not this beautiful Apple more frequently seen? Are all the trees sold true to name? I think I have seen some that are not. The fruits are above medium size, good alike for cooking or dessert, and the waxen-yellow skin, deepening to orange and sometimes faint crimson, renders them attractive. The flavour is good at Christmas. Succeeds well as a standard in good soil and a warm situation. When well grown there is no difficulty in selling the fruit. Give phosphatic rather than nitrogenous food, and the fruit will be improved in colour and flavour. Liquid manure is always acceptable by free bearing trees.

Kerry Pippin.—A little gem for private use, and comes in well for the early shooting season. From September to November. The tree is a rather small but healthy grower. The fruit is much like Golden Winter Pearmain in colour, but of decidedly better flavour. These small growers require their fruit well thinning and the roots liberally treating for affording the best of fruit.

Margil.—Season, November to February. This first-class dessert Apple is suggestive of a smallish Ribston with soft flesh. The tree is a small grower, and on poor soil subject to canker. Do not allow the branches to become crowded; thin out old spurs, and give the best of culture, then you will have an Apple worth eating—a Ribston flavour, and something more.

Trumpington (syn. *Eve Apple*).—Season, September to January. I find this to be a delicious little Apple at midwinter for private use, but should not grow it for market. The skin is striped with pale red on the shaded side, but covered with bright red in the sun, so much so that I have occasionally seen the tender flesh coloured nearly all through. The tree makes a good half-standard, and perhaps succeeds better in the north than the south, as I have the fruit described as "second-rate."

Irish Peach.—Season, August. Everyone connected with the garden probably knows that the fruit of this early Apple is best eaten directly it is gathered. The tree requires good cultivation. The roots must not be allowed to get down into a cold clay. Care is required in pruning, because many fruit buds are formed on the current year's growth. Thin out the old spurs and keep the wood thinly trained, also thin the fruit when crowded, and then you may have it in the best condition.

Dutch Mignonne.—Season, December to April. The fruit of this not extensively grown Apple is of good dessert size and handsomely shaped; the tree is a free grower and bearer, and makes a productive bush or half-standard when branch crowding is not permitted. When the fruit is well grown and ripened the flesh is yellow, and I have had it of first-class quality in April. An excellent Apple for private use.

Lord Burghley.—Season, January to June. One tree at the least ought to be found in every garden of any size. The fruit is of good appearance, medium size, with a flush of red next the sun, and the flesh is of Pine Apple flavour. Keep the roots out of the subsoil and the branches thinly trained, then with a fair amount of phosphates added to the soil, with manure when the crops are swelling, the best of fruit may be obtained. Sturmer Pippin is not worth growing, as compared with Lord Burghley, in Yorkshire as a late dessert Apple.

Old Nonpareil.—Season, February to May. Just the Apple for private use in the spring. The tree is a small grower, the fruit requires thinning to obtain a fair size.

King of Tompkins County.—Season, December to March. A large, well-flavoured, soft-fleshed Apple. Tree a very strong grower. I have grown three cordons on a south wall, and they have given much satisfaction.

Blenheim Pippin.—Though I consider this Apple of excellent dessert quality, I cannot recommend it for quick returns as a bush. For a permanent place, with good soil, plant Blenheim as standards, wait till it bears, and it will give approved fruit for a generation.

All the varieties mentioned will appreciate a mulching of manure over their roots in summer.—GEO. PICKER.

DEUTZIA GRACILIS.—Plants of these intended for forcing are best placed in frames previous to taking them into heat. If introduced direct from the open into strong heat the buds are liable to be blind. From frames the plants may be placed in a greenhouse of 45° to 50° temperature. This will cause the buds to swell gradually, and when further advanced, or about to burst, give a moist atmosphere in a temperature of 60° to 65°.—D.



CYPRIPEDIUM INSIGNE, HAREFIELD HALL VARIETY.

THE number of varieties of *Cypripedium insigne* grows greater year by year, and the enhanced beauty of some of the present-day forms in comparison with the type is most striking. Some are remarkable for distinctness of colour, as, for example, *C. insigne* *Sanderæ*, while many combine size with other attractive points. Coming within this latter category is the one represented in the accompanying woodcut. This variety was exhibited by Mr. H. Holbrook, gardener to E. Ashworth, Esq., Harefield Hall, Wilmslow, at the Dill Hall on December 13th, 1898, when the Orchid Committee recommended a first-class certificate. A glance at the representation (fig. 1) will convey an excellent idea of the boldness of the flowers, which are carried on stout footstalks well above the proportionately strong leafage. The most attractive organ is the dorsal sepal, it being quite 3 inches across the centre. The central portion is pale green heavily spotted with chocolate, all round the outer portion of which is a broad margin of pure white. The pouch and petals are yellowish green with veins of darker green, and suffusions of brown. The Harefield Hall variety of *Cypripedium insigne* will be adjudged by all who see our illustration one of the handsomest forms extant.

ODONTOGLOSSUM ROSSI.

Although, excepting a few rare varieties, this species is looked down upon, it is one of the most useful of cool house Orchids. It keeps up a long continued winter display, and the flowers are wonderfully varied. The plants do best in small pans suspended from the roof, but if this is not convenient they will grow well and flower annually on the side stages of the cool house, which are as a rule not very far from the glass. Quite ordinary compost and general treatment suffice, and the flowers last as long as any in the genus, not excepting the well-known *O. maculata*.

It is named after a collector once in the employ of Mr. Barker of Birmingham, and it flowered in his collection soon after its introduction in 1837. The typical form has whitish flowers spotted with reddish purple all over the sepals and on the basal half of the petals, the lip usually yellow streaked with red. Beside this there is a bright coloured form, *O. R. rubescens*, having rosy red segments spotted with reddish brown; *O. R. aspersum*, thought by some authorities to be a natural hybrid between *O. Rossi* and *O. maculatum*, and having a good deal of the yellow of the latter; *O. R. coerulescens*, *O. R. Warnerianum*, and many others more or less distinct. Many collectors have sent it home since its introduction, and all who have met with it agree as to its great variability in its native habitats.

CATTLEYA DOLOSA.

This is a charming *Cattleya* not at all popular, or indeed known. It is strange that it is not more often sent home by collectors, for there are not many plants of its size that produce such fine showy blossoms. It has been described as a variety of *C. Walkeriana*; but from a garden point of view, at any rate, it is quite distinct in its habit and manner of flowering, the blossoms occurring on a scape from the centre of the growth instead of upon a separate growth, as in the older species. Like *C. Walkeriana*, it has broad overlapping side lobes to the lip, this organ being a rosy purple of a deeper shade to that on the sepals and petals. Plants of it do well in the ordinary *Cattleya* house temperature, suspended not far from the roof glass in pans or baskets. Equal parts of peat fibre and sphagnum moss over good drainage suits it well, and a fairly long but not dry rest is required. In all cultural details otherwise it may be treated like the labiate kind. We should be glad to hear of any Orchid readers of the *Journal of Horticulture* who have been successful in its culture, with particulars of treatment followed.—H. R. R.

LONDON GARDENS OVER FIFTY YEARS.

THERE was a worthy London citizen of the olden time, his name I cannot recall, who knew the metropolis when it was but of moderate dimensions, and in his admiration of it he compared London to Zion of ancient days, calling the city "beautiful for situation, the joy of the whole earth." We like his enthusiastic love of this city, the more, perhaps, because now such a sentiment is not as common as is the propensity to find fault with one's place of abode. Whether London was then the "joy of the earth" may be doubtful, but since it has undeniably become a centre of attraction, drawing people from every land. "Beautiful for situation," this was true of the mediæval city, and even yet, despite the enormous growth of the metropolis, some charming bits of scenery have escaped the road maker and builder.

Situated in a fertile valley, with the ground rising into hills both north and south of the Thames, old London was largely sheltered from gales by the extensive woods that lay around, amongst which here and

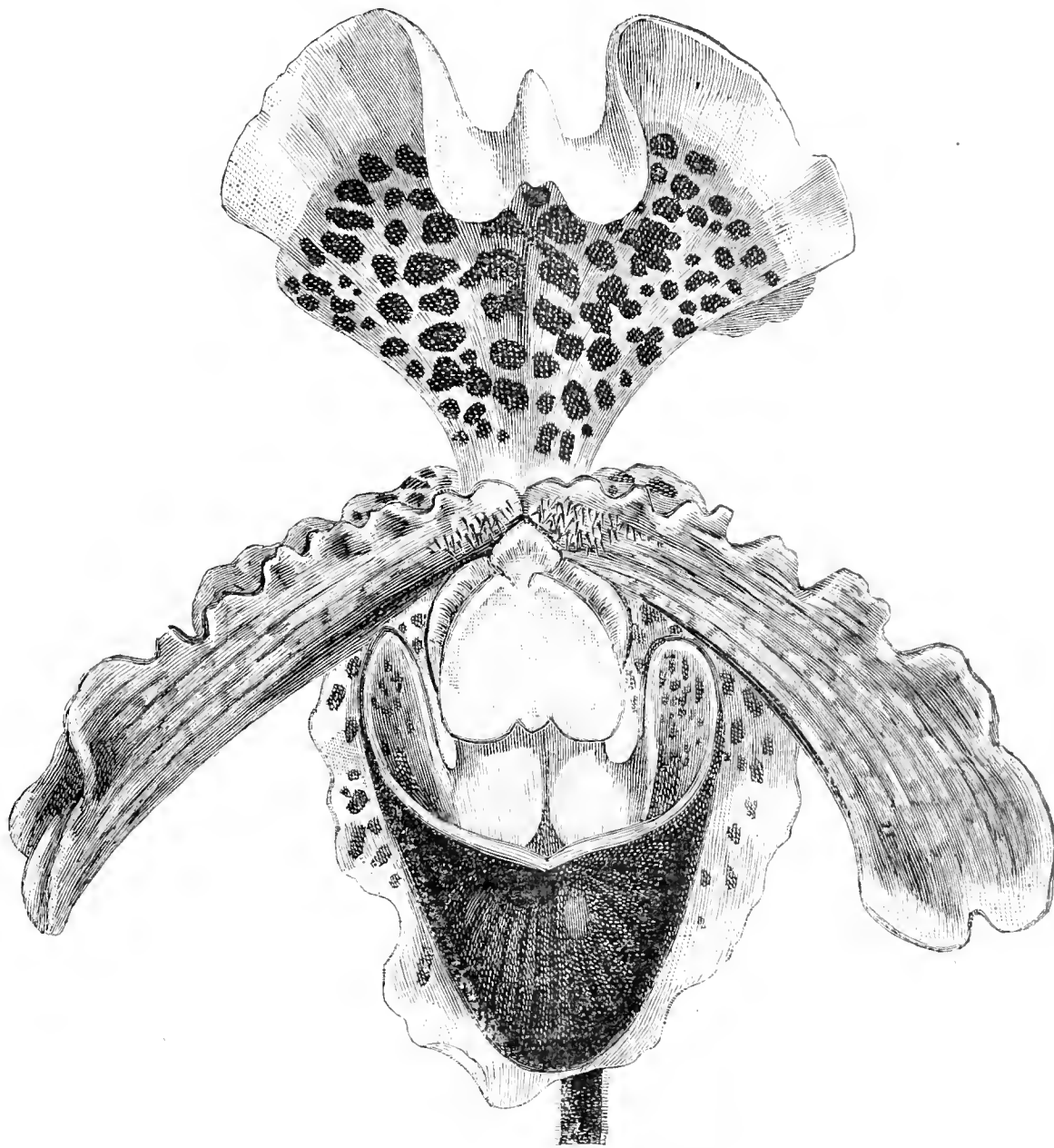


FIG. 1.—CYPRIPEDIUM INSIGNE, HAREFIELD HALL VARIETY.

there stretches of heath or common occurred. Another advantage it had was the numerous rivulets and brooks which flowed from the uplands. By-and-by there came a change with the progress of horticulture after the seventeenth century; orchards and gardens increased around London, but they did not spoil its vicinity, though it became less rural. Green spaces still separated the hamlets and villages, which were at last to fall into the clutches of the expanding city, and lose their distinctness. When this century closes, it will look upon a very different London from that in which our great grandsires lived content when it opened.

Peter Cunningham, describing the London of 1848, the year when the *Journal of Horticulture* came into existence, remarked that the rents of the metropolis had been gradually advancing since 1800, and, while that was the case, building would go on rapidly, nor was it likely to stop until rents began to fall. At this hour, though we notice some local fluctuations, there is no sign of a general reduction, yet the great rise of all rates must tend at last to produce this result. But the grand impetus to building operations which has produced such changes in London suburbs had not been given when Cunningham wrote. The nurserymen and market gardeners seemed likely then to hold, for a good while, possession of grounds which yielded during

average years a very good return upon the capital invested. We have no statistics giving positive information, but I believe, fifty years ago, the bulk of the vegetables consumed in the metropolis were raised in Middlesex, Surrey, and Essex, and a great part of the English-grown fruit came from orchards within the sound of St. Paul's. It was curious to notice, as the rural districts near London became the sphere of building operations, that the market gardens were generally the first to be cut up into streets and roads; the private residences, with park-like grounds, scattered amongst them, held out longer, but they, too, succumbed at last.

At the census taken four years after the Queen's accession the population of London was about two millions, at the next in 1851, a quarter of a million had been added, but the advance during the last forty years has been much greater. The Great Exhibition of that year was a turning-point in the history of the metropolis, bringing, as it did, visitors from all countries, and it added to the number of residents. Then the rapid increase of periodicals and magazines, in which London localities or London life were frequent themes, tended to draw people to the metropolis as a grand centre of wealth and activity. Again, the increase of railway lines and branches opened up new facilities for reaching London from many places, where, in Georgian times, most of the inhabitants seldom travelled any distance. Probably people would have been less eager to migrate to London half a century ago had the insanitary condition of many districts then been revealed, but the newspapers of that time took little notice of matters which would now be soon subjected to a searching investigation. Even the prevalence of the fatal cholera in more than one season did not scare people, though during the autumn of 1849 the deaths in the limited area of London of that date amounted repeatedly to 300 a day, or more, from that disease alone. During some of the cholera visitations the trade in fruit and vegetables suffered considerably, owing to a notion that even persons in health should abstain from these to lessen the risk of taking the epidemic. Curious to say, an investigation of the callings of those dying from cholera in one suburban neighbourhood showed that gardeners were more exempt than other men. Large crops were raised in many of the market gardens, largely with the aid of animal manure, and the method of rapid rotation of crops was general. Therefore it is not at all astonishing that when in low-lying districts houses were erected upon ground which had been thus treated for years, built without any substantial foundation of brick or concrete, they turned out to be nurseries of malaria.

Just about the time this Journal entered on its honourable and useful existence I lived in a house not far from Buckingham Palace, on the border of Westminster. This was not very lofty, yet from its upper windows could be seen the hills of Surrey—i.e., Lavender Hill, Pig Hill (so called formerly), and others between Battersea and Clapham. Up to that date the builders had not been very busy on the Surrey side of the Thames, and even to this hour the southern suburbs of London seem endeavouring to retain somewhat of a semi-rural aspect. In 1848 there were still open hills on the Middlesex side within the boundaries of Westminster which gave a free view across fields where the sportsman could shoot wild fowl. Then the Willow Walk not only retained its name, but its Willows and rivulets ran amongst the market gardens, over which persons had to cross by a plank bridge. The broad space, however, which bore the name of Tothill or Toothill Fields had been built over before the Queen's accession; all but the green centre of Vincent Square, which yet remains as a memory of a spot where the old herbalists sought medicinal plants, and the ditches afforded Watercresses to the Westminster folk.

But for the obstruction caused by the warehouses and other buildings of Lambeth persons could have seen, by aid of a glass, from the terrace of the Houses of Parliament, the orchards which fifty years ago yielded crops of fruit about Vauxhall and Kennington, in spite of the London smoke. More recently, about seven years since, I was shown Mulberries, Cherries, and Pears taken from a small garden at Vauxhall, which was being cleared to be thrown into a recreation ground then forming. In 1848 I believe there was yet visible a remnant of the stream called the Effra, which flowed from the uplands of Brixton and Norwood to South Lambeth, a boon to many gardens near which it passed, but in its capricious moods apt to damage some of them by a sudden overflow. It was in that year, on April 10th, that Kennington Common, a wild, unattractive space of waste land, was the chosen place for a vast Chartist gathering, which caused no small alarm at the time. People thought that Fergus O'Connor and his companions were going to inaugurate a revolution, but the movement ended in an ignominious collapse. What a contrast between the scene of that day and that which greets us in the present Kennington Park, a home of flowers from spring to autumn, where the trees and shrubs planted since the old common underwent transformation have made good progress, and it affords a pleasant resting-place amid the bustle of a suburb traversed by many thousands daily!

Taking another retrospect, in that neighbourhood there was, fifty years since, a remnant yet of the far-famed Vauxhall Gardens, a favourite resort for nearly two centuries. Diminished by various changes, with little left of the garden about it, about 1852 it was closed, and the ground cleared for building. Some of the old trees remained till the last, but the Gooseberry hedges, the Asparagus grounds, the beds of Roses (for it was at one time partly a nursery garden) had vanished with the nightingales, long before that date. Many persons now living will remember the Surrey Zoological Gardens, which occupied a space of about 12 acres at the time of which I am writing, situated between Kennington and Walworth. Though thus named in the later years of its history, at first it was a sort of botanical gardens, which, opened to the public during the reign of William IV., was planted with a variety of exotics. Lectures were given, open air demonstrations in botany, and so forth, but the educational scheme did not answer, and so Mr. Cross removed his animals thither from Exeter Change, zoology and miscellaneous exhibits becoming the attractions of the place. It had a rather extensive lake, used for aquatic shows. At one time there was a probability the gardens would be taken by the Royal Horticultural Society, when a suburban site was being sought for a show garden; had that happened the ground might awhile have escaped the builder.—J. R. S. C.

WANTON WASTE OF WEALTH.

THIS alliterative heading is taken from some significant remarks by Mr. Roupell in his paper on "Suburban Fruit Growing," in part 3, vol. xxii., of the Journal of the Royal Horticultural Society, just published. The following are the remarks alluded to:—

"Fruit growing in the suburbs of London is no new thing. From time immemorial market gardeners have grown their fruit and vegetables, and taken them to market, bringing back in their carts and vans manure obtained at a cheap rate in the town. The distances to be covered fifty years ago were comparatively small, and growers made a pleasant and comfortable living by the cultivation and sale of Grapes, Plums, Apples, and bush fruit, in addition to vegetables, all of which brought good prices. The land was not over-drained, and in some cases it was marshy and waterlogged. Ponds and ditches were in many instances the sources of their water supply for horticultural purposes; but in those days we did not suffer so much in dry weather from lack of moisture as we do now that there is no reserve stored up in the subsoil.

"The main drainage of London, though necessary from a sanitary point of view, has greatly lessened the fertility of the soil. In the first place, it has carried to the sea incalculable wealth in the shape of organic matter, which was formerly available for the fertilisation of the land. Houses were then drained into cesspools; the night-waggon was a familiar institution in the town; hardy farm labourers cheerfully engaged in the most offensive tasks for the sake of a little addition to their wages and privileges; and Mother Earth, the great deodoriser, received back her due. But now she is robbed and starved, or cheated with stable litter, which differs greatly from the old farmyard manure, or she is insufficiently fed with artificial manures, some of which are of but little value.

"In the second place, the main drainage of London has intercepted all the springs and rivulets which previously found their way from the beautiful hills which surround London to the valley of the Thames, and the blessed raindrops which heaven distils are bound by Act of Parliament to hurry from the roofs of palaces and cottages alike through the same foul pipes which carry the diluted sewage to the sea. It is within my knowledge and recollection that the eminent engineer Robert Stevenson the younger, and others, who professionally approved the main drainage scheme, regarded it as a necessary first step which would eventually have to be followed by a system of separation. This is not a cheerful prospect for the ratepayer, but the question will have to be faced, as Nature will inevitably call the inhabitants of London to a strict account for their wanton waste of the vast wealth of organic matter which is now sent down to the river's mouth to feed or poison the fishes.

"One has only to look at the standard trees in the suburban gardens to see how rapidly they are failing. The tops are dying—an ominous sign. And this is true also of the forest trees in Kensington Gardens and some of the public parks, especially where the subsoil is gravel.

"I have touched upon this branch of the subject because one of the first necessities in fruit growing is a copious supply of water. My friends often ask why their out-of-door Peaches fall off every year when they are about the size of hazel nuts, and on examination at the foot of the wall the subsoil is always found to be as dry and hard as bath brick.

"When the old suburban gardens were first laid out the soil was generally fresh and in good condition; for as building extended meadows

and market gardens were absorbed, and fruit trees thrive in the freshly broken ground enclosed within the garden walls; but of late years the speculative builder has converted the light soil into mortar for building purposes, and the new gardens consist generally of clay and rubbish fenced in with oak palings. The fine old gardens of Dulwich, Tulse Hill, Streatham, Putney, and other suburbs still remain, but the surface soil is generally exhausted, sour, and full of fungoid germs. To buy fresh soil in quantity would now be an enormous expense, and the question is, What should be done to restore fertility to the soil?

"I am afraid that the art of trenching is in danger of being lost in the suburbs of London. Nearly all young gardeners want to get into the glass houses and amongst the flower pots. The first tool put into the hands of a young gardener should be a spade, and if he do not begin to use it in early years he will never have the muscles or the inclination to use it manfully. If you want trenching done properly you must look about for some old labourers to do it. Of course a good deal depends upon the subsoil, and I do not advocate the bringing up to the surface a quantity of gravel or stiff clay. But a portion of the latter material may with advantage be turned up, and when dressed with lime and exposed to the frost it will soon break down and admit of being incorporated with the rest of the soil. Where it can be done some clay should be burnt or charred and worked in with the rest. All lime and brick rubble should be saved. The ashes of rubbish heaps, soot, sweepings of the poultry yard, dovecote, and stable, refuse from the kitchen, weeds, and leaves should be collected and spread over the ground to be turned into the bottom of the trench, so as to be buried with the stale and exhausted soil from the surface.

"When the trenching is completed the surface should be heavily dressed with quicklime and be left rough for the winter. In the following spring a liberal dressing of quarter-inch bones or coarse bonemeal should be lightly forked in and a green crop, say of Tares, raised, which might with advantage be dug in to freshen and enrich the soil. The land would then be fit for planting with fruit trees in the following autumn. Stable litter—I will not call it manure—is of but little value except as a mulch in dry or frosty weather. This should be spread round the trees after planting, and when there is a good crop a surface dressing of any good manure, consisting mainly of phosphates and potash rather than nitrates, should be sown. The trees will require to be watered in dry, hot weather, as the roots, if planted properly, are near the surface.

"I have tried planting maiden trees, but whether pruned the first year or the second, I have never been able to make such good bushes or pyramids as those obtained from the nurseries under the description of 'Two-year-olds, with some fruit spurs.'

"With respect to pruning it has been humorously said that 'there are two sets of fools—those who prune too much and those who don't prune at all.' I have found it better to be cautious in the use of the pruning-knife after the foundation of the tree has been laid, and to confine pruning to thinning out objectionable shoots rather than to shortening them back. Summer is to be preferred to winter pruning, as the wounds heal over more quickly and leave less opportunity to canker germs and American blight to effect a lodgment.

"Summer pinching has its uses, but bushes pinched into stunted growth can never be got out of it. I prefer a more natural system."

There are several excellent essays in the publication in addition to that from which we have taken the above notes. These comprise "Garden Peas," by Mr. N. N. Sherwood, V.M.H.; "Origin of Species—Inducing Varieties," by the Rev. Professor G. Henslow, M.A., V.M.H.; "Economic Uses of Bamboos," by Mr. A. B. Freeman Mitford, C.B.; "Hybrid Water Lilies," by Mons. Robert Latour Marliac; "Water Lilies," by Mr. Jas. Hudson, V.M.H.; "Perpetual Strawberries," by Mons. Henri de Vilmorin, F.R.H.S.; and "Disa grandiflora," by Mr. F. W. Birkinshaw.

COMMENTS ON APPLES.

MR. PICKER has taken my criticisms very well on the whole, but I wish he had left out the last sentence. He must not forget that he specially invited criticism. As to Bramley's Seedling, the difficulty appears to be that it takes up too much room. This also seems to be the objection taken to it by a writer in the previous number of the Journal (which is unfortunately mislaid, so that I have forgotten his signature). He grafted Bramley's, and it grew luxuriantly for two years, and then he root-pruned it! A two-year-old graft! Bramley is not a toy or a pocket Apple tree, but a fine big tree, to produce Apples by the sackful, and it should not be planted or grafted where there is not room for it.

I hoped I had a little claim to the grand old title of gardener; but, anyhow, it is a piece of news to me that it is not the gardener, nor yet the unfortunate folk who have to eat the produce, but the "practical cook"

who decides upon what varieties are to be grown. I know it is the general idea—traditional with cooks who do not have to eat it, but general ideas are not always right—that Apple sauce should be acid. I like sweet Apples for sauce; acidity gives me the gout or bad temper or something. Somebody wrote, he supposed I did not like to eat sugar with my Apples. Well, I do not, when I can get the sugar, naturally provided and properly mixed, in the Apples themselves.

Mr. Picker writes of a gardener carrying in Lane's Prince Albert for dessert, who said they were appreciated "as a change." If that gardener's employer likes a change from best to worse for the sake of change, I can only say I do not agree with him. My "fixed taste" is that "the best of everything is good enough for me."

Mr. Picker makes a point when he says that he cannot understand how I can grow Cox's Orange when my soil is not good enough for Gascoyne's Seedling. Well, I cannot grow Cox's Orange to size and perfection without a great deal of trouble, but I must have it if I can possibly manage it, as I have nothing to take its place, whereas I can find a substitute for Gascoyne's Seedling. By using all means of strong and suitable stocks and high feeding I can get Cox's Orange to grow well and to fruit freely for my own consumption, but not to produce samples fit to compete with those grown on better land. I have not succeeded so well with Ribston Pippin, and anyhow I should prefer the other.

Yes, I do go to church. I have never heard anyone find fault with me in that respect. As to sermons, I am so unfortunately situated that I always have to listen to the same man. Yes, I am getting rather tired of him. His sermons are not "very good," and I am afraid others would object to the "same two every week for eight or nine months," even if I did not. In short, I am still of opinion that too many varieties of Apples are grown as a rule, but I know it is a good test of the energy of a gardener, whether he will have the pluck, gradually, perhaps, but surely, to do away with everything—even "useful" varieties—and grow only what he finds to be the best in his own garden.—W. R. RAILLEN.

APPLES IN IRELAND.

I HAVE read Mr. Burdley's letter on page 434, December 8th last, and have to thank him for his appreciative remarks. I regret much I was not at home when he called to see my humble efforts at fruit farming. I am greatly pleased to know that so good an authority was well pleased with what he saw. He asks how I got the idea of growing Bramley's Seedling, and when I give my reason it will also be a reply to your correspondent "K., Dublin," who speaks of wholesale failures in Ireland where Apple growing has been tried.

My idea of growing Bramley's so largely came in this way. I visited a number of gardens in the district where the soil was similar to mine, and found most of the leading varieties of Apples in them. Some were a partial success, others utter failures; I only found Bramley's in two gardens. It was a great success in both; I therefore concluded that it would be a waste of time and money to plant anything else on a large scale. I began with one hundred young trees, and grafted my old trees from them.

Another view led me to grow this variety. It is late, and the fruit keeps well. If I had early Apples, such as Lord Suffield or Ecklinville, good as they undoubtedly are, I could not sell them for half the money Bramley's would realise, because most of the orchards in Ireland are early, and the market is glutted in October. If Apples are cheap then, I can hold mine over till Christmas, or even till April, when I am sure of a good price. In March, American Apples are over. Bramley's is then in perfection, and the crops sell at good prices. Our cold, damp climate, I believe, suits late varieties. Foreign Apples (Australian excepted) are of little value in March. We can compete with them for late Apples, but we have not sun enough to equal them in the early varieties.

I did not go in for Bramley's alone; I tried Lane's Prince Albert, Stirling Castle, Devonshire Quarrenden, Lord Suffield, Worcester Pearmain, Ecklinville, King of the Pippins, Cox's Orange and Ribston Pippins, Blenheim Pippin, Grenadier, and Duchess of Oldenburg. I find Ribston does better than the Cox's Orange or King as standards, but all need a wall. Blenheim will not do at all here as a standard, but succeeds fairly well as cordons against walls. I only tried from two to six trees of each variety, in order to find those which would suit the land, and as soon as I found a variety would not answer I grafted it with Bramley's, because it proved suitable. I believe in increasing those that will flourish, and clearing out all that will not. I do not like to see things in a failing state, and have no time to try to induce them to grow.

I think if those growers "K., Dublin," writes of had begun in a proper way by testing their land with a number of varieties, they would find at the end of three years that a few would answer, and instead of planting (a collection) 500, had several trees of the few which succeeded, they would not have failed.—J. S. SMITH, *Oaklands, Boyle*.



WEATHER IN LONDON.—Thursday and Friday of the last week of 1898 were fine, dry, and cold; but Saturday was wet in the morning, drier in the afternoon, followed by a soaking evening. Each day was somewhat cold, but not really seasonable. The New Year was ushered in by a dense white fog, which clearing was succeeded in the evening by heavy rain. On Monday morning there was a heavy downpour of snow and rain, and towards evening the wind became almost a gale, and was accompanied by driving rain. Tuesday and Wednesday were dull and warm.

TREES IN RICHMOND PARK.—Much adverse comment has been created by the action of the Richmond Park authorities in marking for destruction an immense number of fine trees growing in the woodlands skirting the walks near the walls towards the Kingston end of the Royal demesne. The opinion is strongly entertained that the removal of the many hundreds of trees selected is quite unnecessary, and that if carried out the appearance of the park will be considerably marred. H.R.H. the Duke of Cambridge, appealed to as ranger of the park, has replied that only such trees are to be removed as are necessary to insure room for the proper growth of the remainder.

THE LATE MR. THOMAS SHINGLES.—Many gardeners will hear with regret of the death on the 27th ult., after an attack of apoplexy, of Mr. Thomas Shingles, who had been head gardener for the past twenty-three years at Tortworth (Lord Dueic's beautiful seat in Gloucestershire). As is well known, Tortworth is noted for its splendid collection of hardy trees and Conifers. It was the writer's privilege to visit him occasionally, and what a treat it was to ramble through the arboretum with such a guide. He was a quiet unassuming man, but few men were better versed in the nomenclature of trees and shrubs. One who knew him well says, "There never was a more just master, a kinder or truer friend, or one more ready to help anyone who was trying to do his duty."—S., Yorks.

IMPERIAL PENNY POSTAGE.—Many of our readers will have relatives and friends abroad, and they will probably be glad to know exactly to what places the new rate will apply. The postage will be 1d. per $\frac{1}{2}$ oz., instead of 2 $\frac{1}{2}$ d. as before. Aden, Ascension, Bahamas, Barbados, Bermuda, British Central Africa, British East Africa, British Guiana, British Honduras, Canada, Ceylon, Cyprus, Falkland Islands, Fiji Islands, Gambia, Gibraltar, Gold Coast Colony, Hong Kong, India, Johore, Lagos, Leeward Islands, viz., Antigua, St. Kitts, Nevis, Dominica; Montserrat and the Virgin Islands, Malay States (federated), viz., Perak, Selangor, Negri Sembila, and Pahang; Natal, Newfoundland, Niger Coast Protectorate, Niger Territory, St. Helena, Sarawak, Seychelles, Sierra Leone, Straits Settlements, Tobago, Trinidad, Turks Islands, Uganda, Windward Islands, viz., Grenada, St. Lucia, and St. Vincent.

ANOTHER ONION.—Yet another addition to our swollen lists of Onions is announced; and this time it is a regular "Aristocrat." Not, I hope, a "bloated" one, but one of slim, genteel figure, depending more upon its high flavour and intrinsic merit of flesh than upon huge, watery dimensions. I fear all the same we shall see our Aristocrat friend dressed up in aldermanic clothes by-and-by, having been fattened up to fit them by large doses of turtle soup manures that have the merit of producing bloated earcases in Onions in particular, and in most things in general. But I am always puzzled when I hear of a new Onion to understand where the distinction comes in that makes it differ from others; not a few so-called established varieties will give several forms to the bulbs. We saw ample evidence of that in the great trial conducted last autumn at Chiswick, and the variety that produces every bulb absolutely true to character does not exist. I should like to see each so-called variety very clearly described, and its true features distinctly delineated, so that each one may be in that way detected. Now there is practically no distinction in the plant leafage. This is, as a rule, alike in nearly all cases. It is not until the bulb is fully formed that distinctions are evident, and then we see some globe-shaped, nearly all exactly alike, others round, others flat. Some have white skins, one or two red ones, but the majority are of pale or yellowish brown, and there the distinctions end. I hope the new Aristocrat is an unmistakable swell, disdaining to have any connection in appearance or character with the ordinary Craigs, Exhibitions Excelsiors, Wroxtons, Main Crop, and other swollen democrats.—A. D.

ROYAL HORTICULTURAL SOCIETY.—The first meeting of the Royal Horticultural Society in 1899 will be held, as usual, in the Drill Hall, James Street, Westminster, 1 to 4 P.M., on Tuesday, January 10th.

GARDENING APPOINTMENT.—Mr. H. E. Kennedy, late of Halton Estate, has been appointed head gardener and steward to Sir Alfred West, Bart., Kileroney, Bray, near Dublin.

PRESENTATION.—Mr. George Wall, for the past twelve years head gardener to W. S. Gilbert, Esq., Grims Dyke, Harrow Weald, was the recipient last week of a handsome silver inkstand, presented by the garden staff, on the occasion of his resigning the charge of the gardens at Grims Dyke. Mr. Wall carries with him from the neighbourhood the best wishes of a large circle of friends.

"FLORILEGIUM HAARLEMENSE."—No. 8 of this interesting and valuable work is now before us, and for excellence of production is quite equal to its predecessors. As is customary, the plates are three in number, and comprise Hyacinth Mont Blanc, a well known and largely grown single white variety; Tulips Joost Van Vondel and White Van Vondel, the latter of which is particularly praiseworthy; and Spanish Irises Blanche Superbe, Chrysolora, Sappho, and Coquette des Blanches. The tones of colour in the Iris flowers are beautifully reproduced. As we have previously stated, the publisher is De Erveux Loosjes, Haarlem, Holland.

GESNERAS.—These attractive plants appear to have been somewhat neglected of late years, although few make such a show during the winter months. When at Theobalds, Hawkhurst, recently, I noticed a good stock in an intermediate house, where the plants looked handsome interspersed with Ferns and Palms, the flowers being produced in the greatest profusion. Mr. Masters, the gardener, always grows Gesneras well, and does not consider them difficult to manage; in fact, he treats them very much the same as Achimenes. It is necessary to add, however, that they must be carefully watered and not syringed. Two of the best varieties are *G. zebrina* and *G. exoniensis*.—J. G.

ARTIFICIAL MANURES FOR POTATOES.—In an experiment carried out during the past season at the University College, Nottingham, the best result in the manuring of Potatoes was obtained from a dressing of 6 cwt. superphosphate and 4 cwt. nitrate of soda. This mixture cost £2 6s. 6d., and it gave a net increase of £3 10s. 6d. in the value of the tubers grown with it, as compared with the produce of the plot which had no artificials. As showing, says a contemporary, how puzzlingly variable the results obtained with different combinations of the same manures on the same land sometimes prove, however, it is worthy of note that on another part of the field on which these experiments were being conducted 6 cwt. of superphosphate and 2 cwt. nitrate of soda—at a cost of £1 10s.—gave, not a gain, but a loss of 6s. 5d. per acre.

MR. BARR IN CANADA.—We take the following "editorial" from the "Ottawa Citizen" of December 22nd, 1898:—"Mr. Peter Barr, a prominent horticulturist, of London, England, who is visiting Ottawa, makes a suggestion that is well worth the attention of the Government. It is the establishment of a School of Forestry for the instruction in the propagation and conserving of the forests. Much attention is being directed to this branch throughout the British Empire, especially in India, where it is a well-organised departmental work, the country being divided into districts under foresters and rangers. It appears there is no School of Forestry in the British dominions, and Mr. Barr thinks that the Imperial authorities would make a grant for the support of such an institution where thorough instruction could be imparted in the growth, care, and preservation of timber, and that Ottawa is just the place for its location."

OUR JOURNAL.—I think the contribution by "An Old Provincial" (page 490) will find an echo in the minds of many readers. Those who have the opportunity of comparison know that the Journal provides its readers with pleasurable entertainment, as well as useful information based on practical experience. I, in common with hosts of others, feel grateful for the literary fare supplied, which is so appetising and invigorating. It is beyond many good essayists to impart a sense of humour in the practical teaching, and certainly it is not necessary often, but a change in the "fare," such as "An Old Provincial," or a Mr. "W. Pea" can furnish, certainly intensifies the interest of the ever-welcomed Thursday reading. Many persons, I feel sure, will agree with "An Old Provincial" in admitting that "our Journal" has done an immense service to the cause of horticulture by these genial, instructive discussions, that have largely helped to make it the undoubtedly popular paper with gardeners that it is to-day.—WILTS.

— **MANOR HOUSE, EALING.**—At a meeting of the Ealing Urban District Council it was resolved to accept the offer of Sir Spencer Walpole to sell to the Council, for the purposes of a public park, the Manor House estate. The estate comprises a mansion, at present occupied by Miss Perceval, with grounds attached covering about 31 acres, the purchase price of which is £40,000. The sale is subject to the life interest of Miss Perceval, and the Council will not obtain possession till that lady's death.

— **THE FOREST OF DEAN.**—The foresters of Dean are about to enclose the whole of the 11,000 acres which belong to the Crown, for it has been decided to restore the natural aspect of the forest by planting Beech and Oak extensively, with Larch, Chestnut, Sycamores, and other trees. This treatment has been recommended, says a contemporary, by Mr. Hill, conservator of Indian forests, and, as a result of its application, it is hoped that the fine Oak timber which used to be the feature of this forest may again be seen. An invitation has been extended to all of those interested in the practical management of the woods to visit the place and note the working out of the scheme.

— **JANUARY WEATHER.**—We have had, on the whole, a remarkably fine Christmas so far as weather is concerned, but if Mr. Clements' forecast is anything like accurate we shall soon have a change. January generally, he says, will be a cold month, and about the 22nd and 29th there will be "drifting snowstorms." There will also be rain or snow on the 3rd or 4th and round the 7th and 9th. Indeed, the first and last nine or ten days of the month will be of a "generally unsettled character." We have learned, however, not to place much reliance on Mr. Prophet Clements.

— **DECEMBER WEATHER AT HODSOCK PRIORY.**—Mean temperature, 44.2°; maximum in the screen 58.6° on the 5th; minimum in screen 24.3° on the 31st; minimum on the grass 13.1° on the 31st. Number of frosts in the shade nine, on the grass eighteen. Sunshine twenty-five hours, or 11 per cent. of the possible duration; difference from average, eight. Rainfall, 2.00; difference from average 0.10; rainy days, thirteen; maximum fall, 0.48 on the 26th. Rainfall from January 1st 20.87 inches; difference from average 4.41. Mean temperature 3° higher than any of the previous seventeen years. Very little rain fell till the last few days.—J. MALLENDER.

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingly, for December was 2.86 inches, being 0.12 inch above the average; the heaviest fall was 0.62 inch on the 27th. Rain fell on sixteen days. The total fall for the year was 23.98 inches, which is 6.02 short of the average. It has been the driest year in a nineteen years record. The nearest approach to it was that of 1884, when the amount was 24.05 inches. The maximum temperature was 54° on the 5th and 11th; the minimum 25° on the 31st. Mean maximum, 47.12°; mean minimum, 38.09°; mean temperature, 43.10°, which is 4.96° above the average. So far we have had a green winter, and December has been much too mild. Early blooming Pears are swelling their buds too fast, and green crops are growing, and but poorly prepared for a hard frost.—R. I.

— **WINTER TREES AT HACKWOOD PARK.**—Although at no period of the year do fine trees wear so noble an aspect as when in summer clothed with luxuriant leafage, yet have they very attractive charms when seen in the winter without a leaf, and when on a bright, clear day the stems and branch sprays stand out against the sky in illimitable and beautiful tracery. Poor must be the soul of the observer who does not find in such a sight much to arouse his higher senses, and to appeal to his admiration of Nature's handiwork in but one of her many forms. There are thousands of noble trees at Hackwood Park, both on the verdure and in that huge enclosure known as the Spring Woods. One sees magnificent Oak, Elm, Beech (some of these with clean stems, as masts have, 60 feet high), Silver Spruce, common Spruce, Larch, Sweet Chestnuts, Ash, Lime, Sycamore, all of the finest description, and whether a huge giant standing alone, whether, as in these woods, somewhat densely, or whether in noble groups in the park, trees constitute a really grand feature. What marvellous difference to any extensive area of land is made by the presence of trees, especially of such trees as this grand Hampshire park is producing! It is interesting to see specially, as I occasionally like to do, the giant Beech in one part of the park, at once the finest and noblest I have ever seen. Near to it is an aged Oak, on a branch of which is growing a cluster of Mistletoe; indeed, here in the park may that parasite be seen on Elm, Lime, Thorn, and Apple, also an unusual combination. How clean and robust is the Beech on the chalk formation! just as in the lower soils where loam abounds Oak is very fine and healthy. The Park is for its trees a happy hunting ground for artists.—WANDERER.

— **MR. BRISCOE-IRONSIDE IN ITALY.**—We are informed that Mr. Briscoe-Ironside has recently concluded arrangements with an Italian to found a business establishment in the north of Italy for the purpose of extending the cultivation of the Chrysanthemum in that country. Preparations are being made to start on an extensive scale, and the new undertaking will be the first of its kind. The firm will be known as Messrs. Stroppa and Briscoe-Ironside, Tradate, Lombardy, Italy.

— **THE DECLINE OF COFFEE DRINKING.**—Although some medical authorities assert that Coffee is an antiseptic and disinfectant and effective in cases of typhoid, the general consumption of the berry in England does not increase. It will be seen from a reference to the Customs' returns that Coffee is still on the decline. This is due no doubt to the ease with which Tea can be brewed by comparison, and the tremendous spurt made of late years by the wealthy firms engaged in pushing the sale of Tea. Coffee is left to struggle on and live on its ancient reputation—a reputation, by the way, held in affectionate regard by steady-going Coffee drinkers, who resist all efforts to wean them from their beloved beverage.

— **"THE HORTICULTURAL DIRECTORY."**—As has already been announced, this long familiar annual is now being issued from 12, Mitre Court Chambers. Besides registering many more gardening establishments and gardeners' addresses than before, also publishing an extended list of nurserymen, seedsmen, and florists in this and other countries, as well as of horticultural builders, engineers, and sundriesmen, landscape gardeners and park superintendents, much miscellaneous information is given in the 550 pages, including a descriptive register of the plants, flowers, fruits, and vegetables which have been honoured by the Royal Horticultural Society from the end of September, 1897, to the close of the corresponding month in 1898. The present is the fortieth issue of the Directory, and the price remains as before—one shilling. It is alike suitable for the tradesman's desk and the gardener's table—handy for reference all the year round.

— **DEPTH TO PLANT FRUIT TREES.**—Some time ago the "Agricultural Gazette" obtained the views of three eminent nurserymen upon the depth at which to plant fruit trees. Two recommended planting so that the budding mark would be about 2 inches below the surface of the soil, to hide the scar, and keep it from injury, while the third maintained that the trees should be planted at the same depth as they had stood in the nursery in which they were raised. The last objected that an Apple on the Paradise stock, for example, would lose the advantage of the dwarf habit of the stock if the scion were placed below the surface of the soil, and thus were allowed to throw out roots. To this the reply was that a scion will not throw out roots in one out of a hundred cases. A fourth authority confirms this statement. There is, however, a further objection to the slight extra depth in planting—namely, that it is desirable to keep the roots as near the surface as possible. Thus the relative advantages of the two methods are puzzling, and experiments to decide on the question might well be carried out.—("Irish Farmers' Gazette.")

— **GIFT PLANTS AT CHISWICK.**—The very large increase found annually in the fellowship of the Royal Horticultural Society doubtless finds some stimulus in the somewhat liberal distribution of plants free of cost which is made annually to these Fellows from Chiswick. Very much of the labour expended there is connected with the propagation and growth of these plants, for all are in pots, and just now long ranges of pits may be seen full of hardy plants, especially alpine, for there is in them quite a remarkable collection of Saxifrages, Sempervivums, Primulaceæ, and similar plants, running evidently into several thousands, and whilst in small pots yet of each kind quite perfect samples, such as any nurseryman might be proud to send out to his customers. In other directions are collections of herbaceous and American plants, whilst in the houses great quantities of Palms, Ferns, Dracenas, Crotons, and other desirable plants are being pushed on for distribution. Certainly guinea Fellows can, what with privileges, journals, and plants, get back something like 150 per cent. for their outlay. I wonder how far distributions of this kind affect legitimate trade, whether at all, in fact. Probably the thousands of plants that go out from Chiswick are, after all, but as a drop in the ocean; perhaps they do but serve to whet the appetite for more, which have to be purchased. Certainly, the R.H.S. does so much for the popularisation of horticulture that the trade have little room for complaint. Fellows not animated by the lower instinct of the general, and who would prefer to see Chiswick devoted absolutely to the highest interests of horticulture, may growl over that somewhat mean use to which the gardens are put, but human nature is still and ever will be of the sort that prefers its pound of flesh to the public good.—A.



THE "ROSARIANS' YEAR BOOK."

(Continued from page 56, last vol.)

There is no denying vegetation matter, as well as manures, not only give great protection to the roots of dwarf Roses, but act as insulators to the same roots. Dry leaves and other litter are almost useless at the time their protection is most needed—viz., during the prevalence of a frost-laden wind. Nor is it any great trouble to draw up some of the surrounding soil around the base of dwarf plants. I have not and will not dig my eyes under these conditions, nor have I experienced it under winter is experienced through the winter. I have, however, I would always earth up dwarf plants. Even if all the upper soil should be washed away, the lower and covered eyes will come up in spring, and generally produce a good plant again during the next summer. This is especially the case with dwarf Teas, Bourbons, Indicas, and Polyanthas.

But when we come to Roses grown in standard or half standard form, it is more difficult to protect. This is unfortunate, as they are the most exposed, and have no eyes at the base to take place of lost growth. A lattice hedge Rose is hardly enough, but its natural character of growing ranker is checked under culture as a Rose bush, and the apex of the stem is fully exposed. In the cases and positions the case is quite different. Wind is the chief enemy of Roses in general, and not around the collar in the case of dwarfs, especially when accompanied by severe frost. A little larchen, straw, or other light litter can be shaken among the branches, but unless we draw these together slightly the protecting material will be blown away. A slight shower will also wash it down to the roots, where it will be of no use, as the roots of our native hibernia are perfectly hardy.

Large and bushy plants should never be planted with any last varieties and not be stand perspective bad weather, according to aspect and aspect. Here we can scarcely protect without much labour and expense, and a variety not suitable to the aspect is used, other elements of the year will also be too inclement.

There is a second reason for protection upon walls with a due south aspect. It will appear strange to some, but I am fully convinced that bright sunshine is equally as harmful in such a position as the sharpest frost. How often we experience a few weeks of sharp frost, a quiet atmosphere, and bright sunshine day by day. At night the frost would be frozen to several degrees, but by mid-day it is thawed, only to be frozen again two or three hours later. This alternate freezing and thawing does far more harm than if even colder weather was experienced, and the Rose would not be protected to so many and sudden changes. I would prefer to have a mild or warm sitting against the wall at mid-day, and so partly counteract the effects of bright sunshine. At the same time this would be a help against night frost, and might be left on night and day, so long as one did not mind the unsightliness. There are few more disappointing places in Rose culture than to lose the long growth of our tender children during winter.

In almost all instances it is the long rods of the previous summer's growth that yield that glorious display of blossom early in the season, and I think we may say this is the case without exception among the tender varieties. I allude to such as Lamarque, Merveille d'Eté, climbing forms of Devonshire, Hiphotea, and Paul de Serres, white and yellow Portlandia, Cloth of Gold (if you can save the wood), Laune Desprez, Madame Dupont Verdet (Pier), and Hattatere. Among the tender dwarf or bushy grown are Chant, Celestial, Chiquette, Comtesse de Nubling, Comtesse de Paris, Josephine Milla, La Grandeur, Lucarne Godeau, Madame Walshe, Monna Phylade, Mrs. James Wilson, Refuse de Portugal, Primrose Dame, and Hattatere.

In the Rose garden are still have many very showy hips and berries, and these alone make a bright display. Many Hybrid Sweet Briar are strongly marked with berries. Lord Penrhyn has numerous kinds of small and almost round fruit, while Jeanne D'Arc and a few more have long and large berries carried boldly upon stems from 1 to 3 feet in length. Out and amongst among almost any flowers or foliage, or dried Chamon, these berries are very showy and lasting. My own experience is that birds do not attack the Rose berries nearly so much as with much acidity elsewhere. Most of the Rugosa are eaten early in the season, but calocarpa still carries large trusses of deep red fruit.

For the two last Christmas seasons we have had grand spikes of the Hybrid Sweet Briar variety, which, with a few sprays of Viburnum or Ivy, had a very showy effect. Myrica peruviana has long long red hips, while others remind the French Rose in growth, and has

almost pure black berries. Gymnocarpa has yellow hips of curious form; placarpha has very small pea-shaped hips of a red colour, and panicata supplies very large scarlet fruits. Rose-apples is a newer variety with large deep crimson and almost maroon coloured berries. A. PIER, Uckfield.

THE "ROSARIANS' YEAR BOOK."

THE active veteran and indefatigable worker in the floricultural domain—Rev. H. H. D'Ombrian—has had sent to us the twentieth issue of his welcome annual, with its neat emblematical cover, the "Rosarians' Year Book." We do not know that we could say anything better and truer of it than that it will rank worthily with its several predecessors. It is like, yet unlike, them all—like them in garb and good feeling; unlike them, of course, in the matter. Not that it is more pleasantly readable than its predecessors, but equally interesting, while not less substantial.

Mr. R. Harkness has the "pride of place" in the present issue, and the photograph of this still youthful but professionally experienced and successful rosarian is excellent. The history of the rise and progress of the Brothers Harkness is succinctly narrated by the editor, and their remarkable achievements in the arena recorded. A well deserved tribute is paid to the unassuming manner of Mr. Harkness in these words, "He never boasts of what he has done, and he never falls into the grievous error of attributing his ill-success at any time to any but the right cause—the superiority of the Roses staged against him." If this were the rule at all exhibitions the meetings would be the more pleasant, and especially perhaps to those taken by surprise and disappointed by the verdicts. In this matter, however, improvement is general, and the great bulk of exhibitors display the truest manhood in bearing their temporary misfortunes bravely.

The Rev. A. Foster Melliar contributes some "Recollections of Roses and Rose-showing." In the "good old days"—i.e., when there was no one from Colechester against him—it seems this then lucky grower and exhibitor could buy a pony and trap or a Guernsey cow with his prize money. He does not say so, but it is not difficult to infer that he could win almost anything he wanted if there were no Cants, Lindsells, or Pembertons. But we must pause and guard against a rap on the knuckles by saying that the owner of the "Rose" cow has turned the tables against all these celebrities, and must therefore have been not "lucky" only, but a good grower, and as a matter of fact his magnificent Tons have afforded conclusive evidence on that point. Mr. Foster Melliar tells us that though he only beat Mr. Lindsell once, he was lucky enough to secure another win against his Roses, because the man went with them from Hitchen, instead of leaving them alone for awhile, fiddled about with the blooms for two hours in the tent and spoilt them prior to the judging, so that our author, taking a lesson from Mr. Pemberton, kept his blooms in the dark, and won by waiting.

It appears that the East Anglian amateur was not invariably right in his action, for he once "stupidly" congratulated a then unknown gentleman who was staging against him on the beauty of his "moss" (as if the Roses were not worth recognition), and received an icy "Thank you." The gentleman was Mr. Lindsell. Again, we are told of an incident of the chances of a friendly competitor, the Rev. H. H. Horner, being prejudiced in this way. "When, as has happened once or twice, a heavy thunderstorm threatened the day before a show, my little man came dancing up to say, 'It's blowing right away from us, sir, and going right over to Mr. Berners'.'" To this the master of the little man naïvely adds, "I am afraid his unholy glees was rather laughed at than rebuked." The author concludes his paper by calling attention to individual blooms of superlative merit, and expresses the hope that growers of such blooms in future will have them handed down to posterity by the photographer's art. The difficulty, perhaps, would be to catch all of them with the camera at the moment of maximum beauty.

Mr. Shankleton discusses on "Roses for Suburban Gardens," and puts in a plea for standards, as "they seem to lift the Roses up into a freer atmosphere." Very good lists of varieties are given for gardens on the confines of populous centres, the author putting in a word for Hybrid Teas, Rambles, and Japanese Roses of the Rugosa type. Of the last named we can say that they succeed better than any others in parks and gardens in the smoky and murky East End of London.

The editor treats the Rose and the National Rose Society over fifteen pages, in which are recorded the main facts and incidents of the past Rose year. Mr. A. Piper's "Comments on New Roses" appear as fair as they are full—an able, interesting, and useful contribution. Mr. Alfred Prince has a concise chapter on "Climbing Roses," and Mr. Edward Mawley, in his own excellent way, deals with the "Weather of the Past Rose Year," scattering useful hints as he goes along. The issue is good all through, and is published as usual by Messrs. Benrose and Sons, Old Bailey, London.

COSTUS IGNEUS.

THERE are several species of *Costus* known to botanists, but it cannot be said that they are very generally cultivated, notwithstanding the beauty of some of them. We are not, therefore, surprised to learn that "H. Long" has not previously met with *Costus igneus*. As we think it will be interesting to other Journal readers as well as our correspondent, who asks for information, we reproduce (fig. 1) an illustration of this very handsome house plant, which was prepared from one of Sir Trevor

shown in the woodcut. Like most of the *Costus* this species thrives best in a stove temperature, heat and moisture being quite essential to its successful cultivation.

COMPOST FOR PEACH BORDERS.

As "A. D." asks for opinions on the most suitable compost for Peach borders, I have pleasure in giving mine on the subject. The too free addition of manure appears to be the favourite practice with

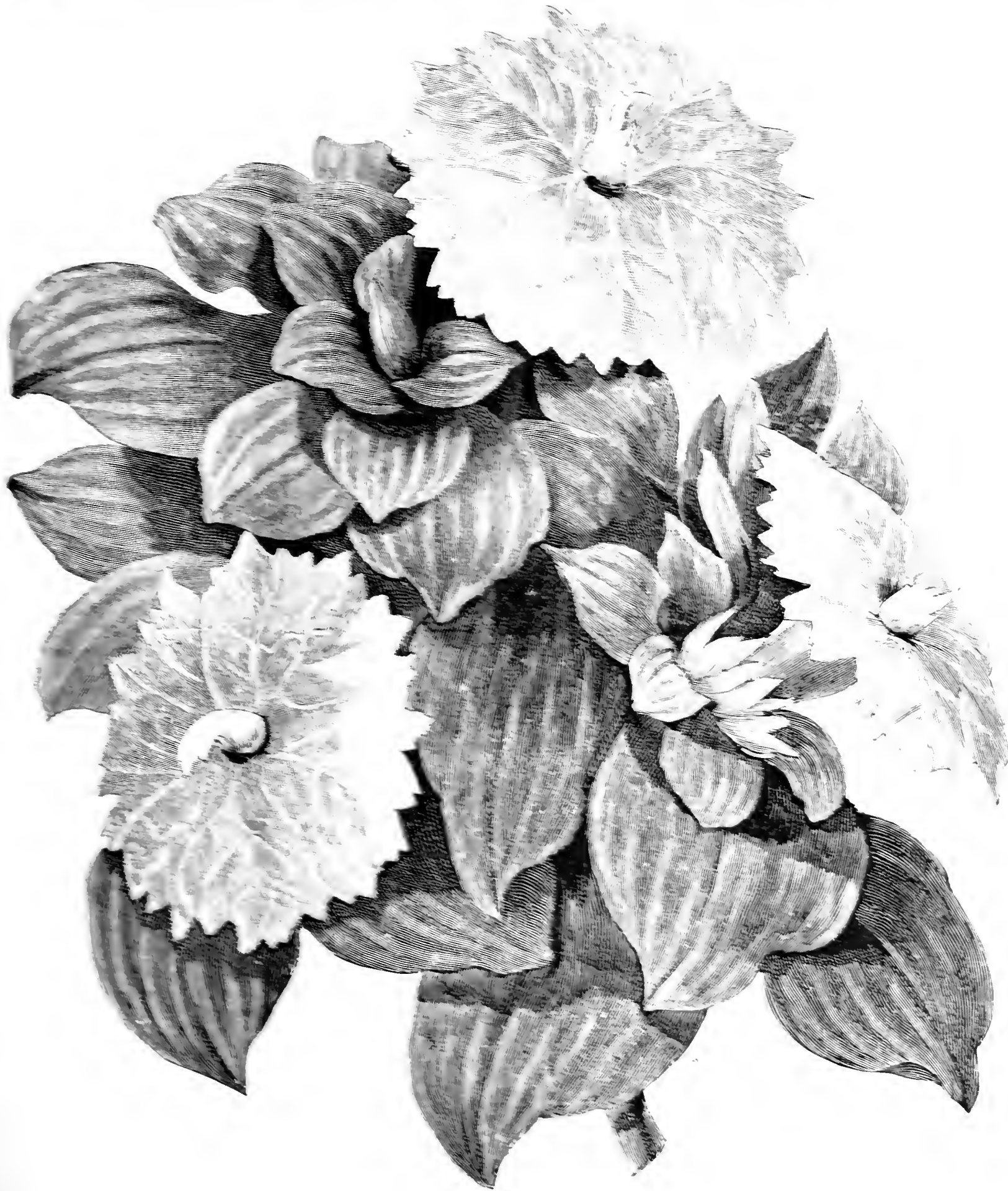


FIG. 1.—COSTUS IGNEUS.

Lavergne's specimens some years ago. It was exhibited at one of the meetings of the Royal Horticultural Society, and was greatly admired. Flowering during the winter months is its distinctive characteristic, and to insure for it a far greater share of popularity than it at present enjoys. The flowers are that of a rich orange colour, and are usually borne in clusters on the top of the stems. The leaves, too, are decidedly ornamental in appearance, and are produced in crowded masses, as

many when preparing a Peach border. The soil should be good, fresh, and substantial, but not richly manured. The Peach, in the early stages of growth, does not require good food, simply because it comes over luxuriant growth, which is sappy, and not sufficient to ripen its fruit well. So long as the soil is not absolutely sandy, peaty, and lay on the one hand, or so stiff, wet, and cold on the other, and it is may be expected to show itself well. Of course it is as well, in the proper position, to dig at the trees, whether under glass or outdoors, for

without abundance of sun it is not possible for Peaches to succeed in any compost. Farmyard manure added to ordinarily good turfy loam will make the compost too rich in organic matter, but a poor loam containing no turf might have a fifth part added of manure, but no more. The best material for Peaches is undoubtedly good calcareous loam. I have seen them do well in such on a chalk subsoil. Cut the turf from a pasture deeply enough, so that there is not only the turf, but a few inches of the soil below, which is all the better if it contains small stones. Light soil can be improved by the addition of burnt or powdered clay. Old mortar, brick rubbish, or lime, may be added at the rate of one-fourth to any soil, also wood ashes and a sprinkling of bone dust. Give not more than 2 feet in depth of compost, making it firm, and have the subsoil well drained.—E. D. S.

THE recipe given on page 494 last week is far too rich. Peach trees planted in a compost formed of such ingredients would produce very gross shoots, and give the cultivator unnecessary trouble in bringing them into a fruitful condition. When trees are planted the objects desired are the rapid production of fibrous roots and moderately strong shoots, which are the visible evidences of correct root action. When trees of this description are established there is no difficulty in securing a good crop of fruit annually under glass, and no matter how heavy, by the aid of top-dressings, abundance of water, and high feeding generally, the crop may be brought through successfully; but to secure fruits of full size liberal thinning must of course be resorted to. The recipe given below is the one I strongly recommend for adoption in forming composts for Peach borders:—Good fibrous loam 10 loads, lime rubble 1 and wood ashes 1 load, with 1 cwt. of bone meal, and 2 bushels of soot. When turfy loam cannot be obtained a mellow yellow clay answers splendidly if, in addition to the other ingredients above given, half a load of charcoal is added.—H. D.

PEACH trees growing in such a compost as described by "A. D." could not well be a success. The soil would be much too rich to insure prolonged satisfactory results. The necessity of the addition of manure to soil for Peach or Vine border making is best judged on the spot. Presuming that freshly cut turf is employed as the staple of the compost, if this be taken from a position that has grown but little grass, then the addition of a manurial stimulant might with advantage be employed.

Soil too rich in manure is certain to cause trouble in the near future in the form of gumming and the general absence of a full fruit crop. Far better to err on the opposite side, because stimulants can always be provided in liquid form and by surface dressings to assist growth when it is seen by the current shoots that the trees require additional aid. Trees that never make growths larger than the small finger, and more often of the thickness of an ordinary cedar pencil, are not only more easily managed, but give much better results than those that make shoots thick enough for walking sticks.

Turf of ordinary quality requires but little to enrich it sufficiently. The addition of wood ashes, old mortar rubble, and charcoal is quite sufficient. The quantity of each to be increased if the turf is of a heavy retentive character. The great aim should be porosity of the soil. This is improved if broken bricks are freely added at the time of making up the border. Finally I would say, to ten loads of turfy loam, of medium texture, add one load wood ashes and charcoal combined, and two loads of old mortar rubble and broken bricks.

In the process of making the border tread the soil down quite firmly. This is an important detail; but in doing this it is perhaps of even greater importance that the soil be in a semi-dry state, certainly not in a wet condition, as if kneaded together it is not favourable to free root action.—E. MOLYNEUX.

THE question raised by "A. D." (page 494) on the ingredients necessary for making a Peach border, should bring out some interesting reading from several among your many readers who have had such work to carry out. I am not a little surprised that "A. D." should accept and describe the recipe forwarded to him as an elaborate one, and I should certainly think the young gardener acted with much wisdom in soliciting the opinion of such an able critic before committing himself to such an uncertain course of action. I once had to take to a newly formed Peach border, so rich in texture that for three or four years I had to continue an annual course of root-pruning before any useful fruit-bearing wood was possible.

Very strong growth is undesirable in any fruit tree, and it is certainly unwise to foster this by artificial means when, by moderation, it is possible to produce an early crop, and build up a more easily managed tree with less trouble or cost. If good garden soil, which has been proved to suit fruit trees, were substituted to almost or quite one-half of the ten loads, the horse droppings entirely omitted, and the Vine manure also reduced one-half, a compost abundantly rich would be provided for Peach growing. Even then the trees would need rational management, and have some freedom allowed them about their heads.

In the production of vigorous and productive trees, pruning is best done in summer, that is to say, disbudding and pinching should be so manipulated that very little pruning in the winter is necessary. Branches thickly disposed, the points of over-strong shoots stopped before they proceed too far, will, when attention to the usual course of watering and syringing is strictly carried out, result in fruitful growth, even if the trees are vigorous. Clear water only should be given for a long time to newly made Peach borders. If this is given in regular and sufficient quantity, there would be abundant fertility found in the soil to insure the best of results.—W. S., *Wilts.*

[We have other communications on this subject from highly successful cultivators of Peaches.]

FREESIAS AND THEIR CULTURE.

IN dealing with Freesias I do not propose to enter into their history, for whatever that may be, it is certain that these easily grown plants with their deliciously fragrant flowers are amongst the most highly appreciated of those that have come to us from the Cape. It is difficult to say to what we can compare the perfume, but to me it seems to combine the scent of the *Maréchal Niel* Rose with that of the *Primrose*. The blooms, when cut and placed in vases with their own foliage, are very effective, and for early spring use I do not know a more useful plant. This is the more emphasised when we consider that the perfume, unlike that of some flowers, is never overpowering, but always refreshing. In my opinion it is a most charming flower, and abundantly repays any little extra care that can be bestowed on its cultivation. The varieties I grow are *Leichtlini* and *refracta alba*, of which the former is soft yellow and the latter white.

Anyone wishing to grow Freesias can do so from seed, which should be sown in August or September, and if in the former month the young plants may flower the following season. If the seeds are home-saved, they must be sown as soon as ripe. When once a start is made to cultivate Freesias it will be found an easy matter to maintain a good stock, for, unlike some of our other bulbs, it is not necessary to obtain a fresh supply each year if the plants have had proper attention. The most suitable soil is sandy loam and leaf mould, and the seed should be sown thinly to avoid transplanting. The pots or pans may be placed in a sunny position in a cold frame, air being admitted by lifting the back of the frame lights immediately the seedlings push through the soil. It is, however, imperative that draughts be avoided. The plants must be thinned out to eight or nine in a 5-inch pot.

When the plants are firmly established they should have abundance of air to keep them sturdy and strong. It will be necessary to afford a slight shading during the hottest part of the day, and as the pots become full of roots watering must be carefully looked to, while as flowering approaches a little liquid manure will be found beneficial. As signs of rest become apparent the water should be gradually withheld, for herein lies the most important point in Freesia growing—that is, to get the bulbs properly ripened.

In many cases, as soon as the flowers are over or have been cut, the plants are cast into any out-of-the-way corner to look after themselves, and it is obvious that well-ripened bulbs will not be had in that way. When the foliage is quite yellow the pots ought to be placed on a vinery shelf, or in some position facing the south where they can enjoy the full benefit of the sun. There will then be no doubt as to the eventual proper ripeness of the bulbs. When this stage is reached they should be turned out and sorted into three sizes, and then be placed in some cool dry place till the time for potting is again with us.

August is a good time to pot the earliest bulbs, following at intervals of a fortnight or three weeks later and so on, according to the stock or the number of plants required. The largest bulbs can be put six or seven in a pot, and the seconds nine or ten in a 5-inch pot, while the thirds must be disposed thinly in pots or pans, to be grown in a similar manner to the seedlings to produce good bulbs for flowering the following year. The best soil for this potting I find to be composed of two parts each of loam, leaf mould, with one part of well-decayed manure and some coarse sand. If the compost is in proper condition no water will be required until growth commences, and a frame from which frost is excluded or a shelf in a cool house will be the most suitable place for them. Abundance of air in mild weather with a light position will be found most conducive to a dwarf sturdy growth; but when the flowers appear a little more heat may be afforded to a portion of the earliest stock to slightly hasten expansion, the remainder being left to form a succession. Great care should be taken in applying the heat very gently, otherwise the plants will become drawn, and the flowers when cut and placed in water quickly flag.

Freesias are naturally weak plants, and should be supported by neat stakes before they are allowed to fall over. The foliage is very delicate, and will not tolerate much fumigation, even with *XL All*. The effects will not be noticed at the time, but a few days after the leaves may turn yellow at the tips.—(*Abstract of paper read by Mr. G. CARPENTER, West Hall, Byfleet, before the Woking Horticultural Society.*)



CHRYSANTHEMUM MRS. M. SIMPSON.

I AM sending you a spray of what I consider to be the finest of all white flowered Chrysanthemums for use at Christmas. For the last two years I have grown it with Niveus as a test, and I have now no hesitation in according to it the place of honour among white flowering varieties. It is an English raised seedling obtained by Mr. N. Molyneux, Rookesbury Park, Fareham. For producing large exhibition blooms during the month of December it is equally valuable. The florets are lance shaped, of medium width and length, and the colour is pure white. Treated as a freely grown bush, lovely sprays carrying from five to eight good sized blooms on extra stout stems 18 inches long, which render this variety so useful for vase decoration.—E. MOLYNEUX.

[A spray sent by our contributor bears out all he says of Mrs. M. Simpson. It consisted of six or seven flowers of snowy whiteness in one compact truss.]

CHRYSANTHEMUM TRADERS.

SEVERAL catalogues of the great trade growers of Chrysanthemums have come to hand. Judging by what one reads in them I can but paraphrase an old observation, and say, "See how these traders love one another." But, after all, is it real "love" which is in these lists made so apparent, or is it only a little trade "bluff"? We are all familiar with the game of the rival showmen at the fair, who in public denounce each other, but in private are warm friends. The pretended quarrels serve to interest and excite the public, also somewhat to blind them. Is it so in the case of these Chrysanthemum traders? Those gold medals seem to constitute the tone of contention. But when the next distribution comes, and Smith or Brown gets one, why then of the disputants one at least is temporarily satisfied. Still there is the bitter cry of the discontented in print, and no awards of gold medals can wipe it out.

Does it not seem as if, after all, greed for gold in the shape of medals had as much power to influence traders as similar greed has for some gardeners, who are prone to haggle over their little wins at shows. Would it were possible to create amongst all classes of exhibitors a little more love for their products, all so beautiful, and rather less of anxiety to secure the "pieces." But where has not the greed for gold permeated? We may, however, wish to see our Chrysanthemum catalogues free from these bitter complaints henceforth, even if they be based on correct grounds. What do the public care about such trivial things?—A. D.

CHRYSANTHEMUM PROBLEMS.

WHEN we begin to force many varieties of Chrysanthemums out of their natural course to meet our exhibition requirements, which restrict the blooming period to about twenty-one days' duration, and expect every plant to produce blooms as good as if we allowed them to develop in their natural course, we are confronted with results as conflicting as they are tantalising. In a vague way we begin to talk about the wood being under-ripe or over-ripe, as the case may be, without reference to the true character of the plant, and often without any conception of what is really meant by ripened wood as applied to Chrysanthemums. If the extremes of ripeness explain our failures we should at least take care that attention be directed to the intermediate degrees, and especially to that degree which gives the best results.

Ripened wood is not a mere figure of speech, neither is the degree of its ripeness to be weighed or measured except by the study of the character of the plant, the manner of its growth, and a due consideration of the question how the ripening influences are brought about in general, and in the Chrysanthemum in particular. In no other class of cultivated plants do we find so wide a divergence in individual constitutional, requiring separate and individual knowledge, and consequently separate treatment and manipulation to bring them into line with the requirements of the cultivator. We have also to take into account, as affecting the complications alluded to, that the processes of feeding, ripening, securing the bud, and development of the bloom, in the abstract, though looked upon as separate processes, in the concrete are inter-dependent—influencing each other as to largely affect the results in the aggregate. For instance, in addition to sunshine and climatic influences, the ripening processes are largely influenced by the nature and extent of the feeding, as ripeness in some degree is first necessary to induce the formation of the flower bud, and later in a larger degree for the development of the bud into a perfect bloom.

Notwithstanding all this it follows that growth, bud formation, and the necessary degree of ripeness must be so timed that the

climatic conditions are favourable to perfect after development of bloom. Some varieties, of which Mrs. H. Weeks is a type, require a whole growing season to produce one instalment of growth and flower bud which will develop into a satisfactory bloom, whilst other varieties of the Vivand Morel type produce in the same time two or three instalments of growth, each terminated by a flower bud.

This constitutional variation is again illustrated by the numerous varieties blooming in their natural course, each in its season from August to December. When we realise that the process of flowering, as part and parcel of the seed bearing leading up to reproduction, is the result of some degree of maturity (ripeness), and why varieties so nearly related as having one common origin, as, say, the Japanese section, all submitted to the same climatic conditions and the same cultural treatment, should show these widely different degrees of precocity, we are led to inquire the reasons.

It would be easy to generalise, and state that constitutional variation, inherent all through Nature, as shown by the laws of adaptation and the survival of the fittest, would account for such wonderful phenomena; but as this maturing or ripening of the wood is the bedrock upon which the intelligent Chrysanthemum grower must build up the superstructure of his routine culture, it would be well to eliminate from his practice as much guesswork as possible, and try to grasp the full meaning of the term "ripened wood."

From the simple elements plants build up their own structure, and, so to speak, manufacture the basis of life in an increasing ratio concurrently with the demand for further growth. Professor S. H. Vines, the most reliable vegetable physiologist living, puts the matter as follows:—It is the light and heat of the sun which supplies the energy, and the green chlorophyll of the leaf is the means by which it does it. Interspersed amidst the protoplasm, which is the living principle, or the substance endowed with life, and carried along with most of its movements within the cell walls, are numerous little spongy bodies penetrated through and through with the chlorophyll or green colouring matter. These minute bodies are known as the chloroplastids, and are the nucleus of the starch granules, which result from a series of chemical changes, and form the basis of the ternary or carbo-hydrate series of compounds, which will be further referred to. The protoplasm is of a more complex character; both it and the chloroplastids are built up at great cost and energy to the plant, and consequently we find it takes good care that it is used to the best advantage; they have a great deal of work to do with very little material. The chloroplastids are ranged along the inner walls of the cell, like rows of buns in a shop window, and appear somewhat of the same shape. When the sun shines brightly they come to the surface and expose their edges to it; if the sunshine is feeble they lay their flat sides up so as to absorb every available ray that falls on the leaf; but should the sunlight be very intense they are shrunk away into that part of the cell furthest away from the light. The object of these movements of the chloroplastids is to get a maximum of work with the least possible waste of energy. As the cell sap with its mineral salts in solution is brought up from the roots to the leaves, it comes in contact with the products of assimilation in course of manufacture in the chlorophyll cells; the salts take their part in the elaboration of the nutritive materials of growth, while the water is transpired through the cell walls into the intercellular spaces, thence into the open air.

This wonderful adaptation of the chloroplastids to the intensity and degree of sunshine in connection with their special functional work is as beautiful as it is wonderful, and, in the light thus thrown upon it, we need not be at all surprised why varieties of the Chrysanthemum having the same parentage should vary in the time needed to acquire the necessary degree of maturity (ripeness) to induce the formation of the flower bud as leading to reproduction. In simple terms it may be put that some varieties are endowed with power to that end of doing more work (viz., the early varieties than the later varieties) during the time the sun shines, in a lesser or greater degree according to the amount of sunshine available, the assimilation of starch as the basis of the ternary compounds, carbon, hydrogen, and oxygen goes on when the sun shines, more slowly if the weather is dull, in the dark ceasing entirely.

As showing the necessity of sunshine, and the enormous energy evolved by the chloroplastids in setting free the carbon of the atmosphere to be chemically recombined in building up the structure of a plant, we have only to note the large proportion of carbon of which it is composed, with the fact that the atmosphere as the only source of it available to the plant contains only four parts in 10,000, and without carbon in its due proportion there can be no starch, and as cellulose of which the cell walls are built is alike to starch in the proportions of its chemical elements there could be no structural carbon skeleton of the plant. The assimilation of starch is the first of a series of chemical changes of the ternary compounds, and later of the more complex nitrogenous compounds, which are passed on to the growing point and utilised in building up the cell walls, and furnishing the living cell contents.

During continuous daily sunshine these complex compounds are formed in greater abundance than can be utilized for the growth, the surplus is stored by as a reserve to be drawn upon in the formation of flowers and seed. Wood fully developed and its vessels stored with these products of elaboration is the measure of its ripeness, as understood in its true sense, and this is what our professional instinct swears by.—T. G. W.

(To be continued.)

TOMATOES AGAIN.

WITH the beginning of the new year growers of Tomatoes on a large scale will commence work in earnest. Many seeds have doubtless been already sown—in fact, our first sowing was made a fortnight ago; but the plants from seeds sown at the present time come on so quickly with the lengthening days that there is little, if anything, gained by sowing before the 1st of January. Inserting a single seed in a small pot is sometimes practised in private gardens; but when thousands of plants are grown this is rather too tedious a business. I sow in shallow boxes, placing the seed about half an inch apart, the receptacles being placed in a propagating house where a temperature of 70° is maintained. In three days the seedlings are visible, and as soon as they are large enough to handle they are transplanted to other boxes, being set about 1½ inch apart, watered, and placed on a shelf or temporary stage near the glass.

If kept in a temperature ranging between 60° and 70°, according to the weather, they grow sturdy and short-jointed, and yet make rapid progress. The important point to act upon at this stage is to pot the plants before they become in the least crowded. Failure to act soon enough in this respect has often brought the box system into disrepute, but I have proved to my own satisfaction that, when properly managed, as good plants may be produced by it as by any other. The plants for the early house I like to place in 6-inch pots, and get them well rooted in the soil before planting out, as this gives the opportunity of keeping them very close to the glass for a longer time than when they are planted from 4-inch pots. All cultivators like to see their first truss of flowers close to the ground, and by giving this extra shift the object in view is promoted. For this second potting a suitable compost is formed of three parts old turfy loam and one part hotbed manure, the soil of course being pressed very firmly.

Various methods of planting have to be adopted according to the style of house in which the plants are to be grown. Let us take the case of one built for Tomatoes, in which the plants are placed in the natural soil. If Tomatoes are to be planted for the first time in it no other preparation than that of digging and levelling will be necessary, as it is undesirable to make the soil too rich; fertilisers can easily be applied when the fruit is swelling. Now let us suppose we have a border which has already been cropped once or twice; in this case I should not care to fork in farmyard manure, but rather rely on a dressing of lime and kainit, the latter at the rate of 3 ozs. to the square yard, then when a good quantity of fruit was swelling manure could be employed as a top-dressing.

Plant houses are now in nearly all establishments used for Tomato growing during the summer, and in such it is generally necessary to plant on the stages. This plan I adopted last season with great success. I fastened boards 9 inches in depth, and about 14 inches from the wall sides of the house, a little rough turf was placed in the bottom of the enclosure, which was then filled with ordinary garden soil, rather inclined to be sandy, yet fairly bolding in character. In this the plants were a decided success; and as such soil has to be cleared out each year and replaced with fresh, trouble from eelworms is reduced to a minimum.

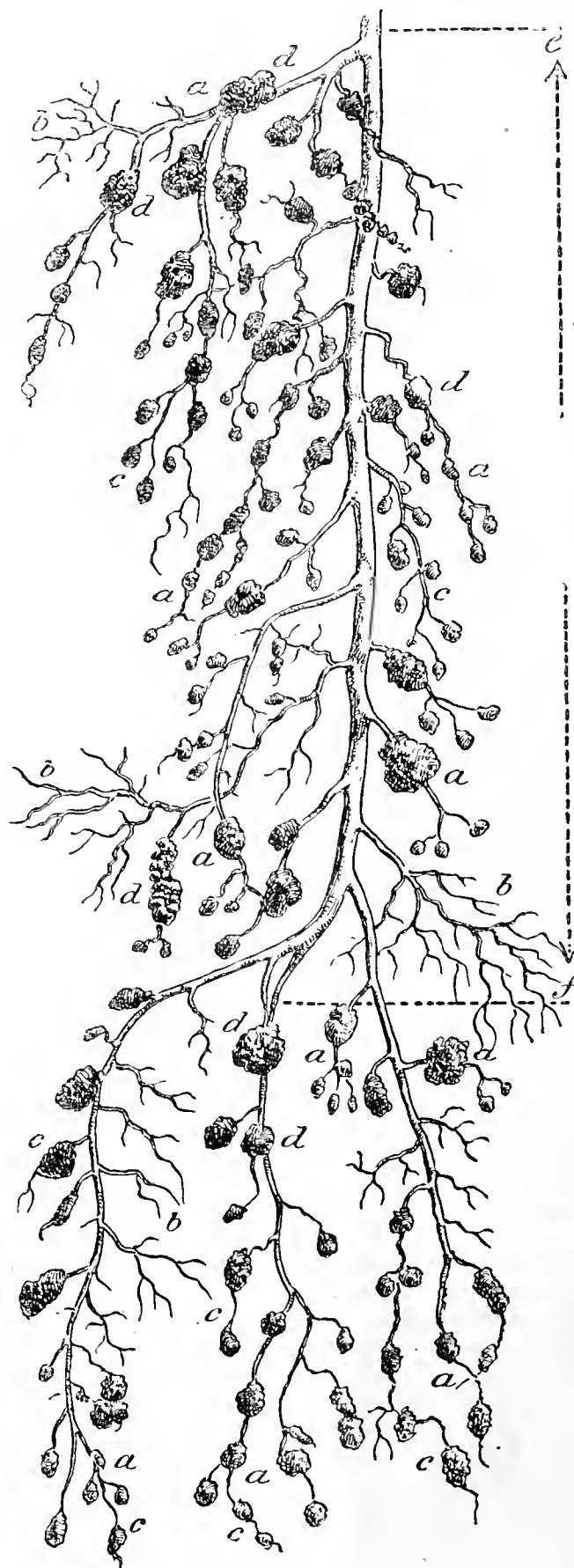
The object of most cultivators is to get as many bright, clear-skinned fruits of moderate size as possible from a given space. Some set their plants only a foot apart, but I think that nothing is gained by such close planting. From 14 to 17 inches I find suitable, but such strong growers as Challenger require the greater distance. Should the soil be in the least wet when taken into the house it ought to be thrown up in the form of a ridge till fairly dry, and then pressed very firmly as planting proceeds.

Varieties.—For early use Sutton's A1 is a grand cropper, and although the fruit is corrugated it is an open question if early in the season it does not prove more profitable than the smooth varieties. Among the latter Frogmore Prolific and Sutton's Eclipse are two of sterling merit. The latter I tried for the first time last year, and shall this season grow it extensively, as it produces enormous clusters of brightly coloured fruits of the right size. I believe Challenger will carry as great a weight of crop as any Tomato grown, but the fruits are a trifle too large. I think, however, by selecting medium-sized fruits for seed I shall in time alter its character. At any rate I shall not discard it yet, as it grows so well, and on that account is useful for planting among the centre of span-roofed houses. Up-to-Date I hope to give a trial this season. If it comes up to its reputation it must be a wonder indeed.—H. D.

EELWORMS IN VINE ROOTS.

A FEW weeks ago a correspondent, "E. R., junior," sent a sample of Vine roots differing from any we had hitherto seen, and after satisfying ourselves that the enemy was not the dreaded phylloxera, Mr. Abbey was requested to bring to bear on the dissected nodosities his 500 power magnifiers, and see what he could find. He has done so, and was thereby made a happy man during Christmastide. He found colonies of eelworms that gladdened his heart, inasmuch as they were the first of the kind he has discovered feasting on the roots of the Vine, and he believes a similar case has not been recorded. If that is not enough to make an eelworm man bappy we do not know what is, and we may be sure the discoverer would not have missed this lucky find for a dozen of the fattest turkeys in the land. Here follows the record, with illustrations.

"E. R., junior's," very fibrous, yet tuberculated, specimens of Vine roots had a singular appearance. A small portion is shown with exactitude in the illustration (fig. 3), natural size.



The excrescences were confined to the fibrelets of the apparently current year's formation, or one-year-old roots (a). A few fibres showed no trace of the attack (b); but most of them were "knotted," and for the chief part at the extremities (c). A few nodosities were found on the branchlets (d), but none on the part of the main root, as I take it, more than one year old (e to f.)

The pest, therefore, was incapable of piercing through the cuticular cells of two-year-old roots, or of penetrating them to the cambium or formative layer, which is necessary for the growth of new (cellular) tissue and the development of an excrescence, or warty swelling. This case is very important, as indicating the power of the enemy in its attacks on the roots of the Vine. The creature, whatsoever it may be, thought I, while generally preferring the tender fibrelets, has also attacked the somewhat older portions of the current year's roots at d; but these, on careful examination, were found to consist solely of dead tissue, and the attack had taken place whilst the tissues were younger and

FIG. 3.—NODOSITIES ON VINE ROOTS.

References.—a, excrescences on young fibrelets; b, clean fibres; c, chief attack or swellings at extremities of fibres; d, nodosities on branchlets or older parts of roots; e to f, portion of root free from excrescences (all natural size).

softer. There is no "guesswork" in this case. Tangible facts were plain enough, and these only I describe and show.

There was nothing in the dead nodosities, but in some of the partly dead and partly living were found certain bodies, fig. 4, A, an egg, with a nucleus (g) and various similar bodies with different internal structures—the nucleus developed into several, and at last

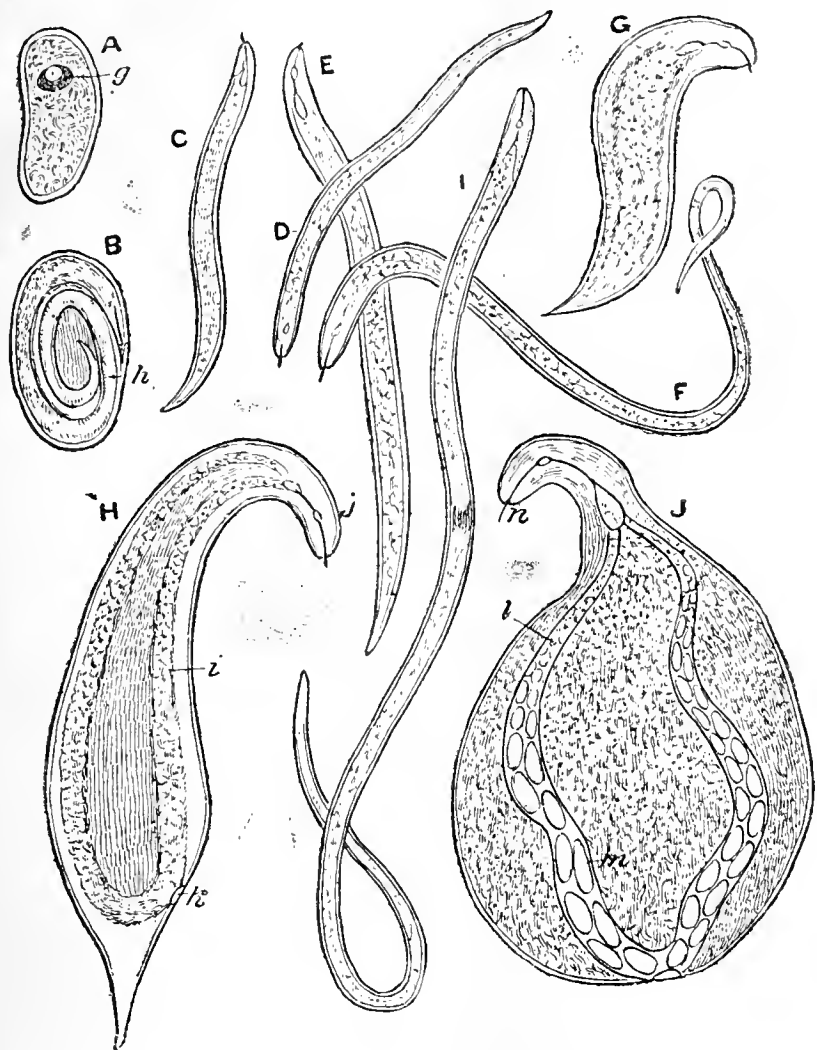


FIG. 4.—ROOT-KNOT EELWORM, *HETERODERA RADICICOLA*.

References.—A, egg; g, nucleus; B, eelworm developed in egg or sac; h, eelworm ready to come into this great world of things; C, female larva; D, male larva; E, full-grown female larva; F, full-grown male larva; G, larva encysting; H, more advanced stage of encystation of female; I, eelworm in cyst; J, head or neck of cyst; K, vulva of eelworm; L, perfect male; M, gravid female; N, eelworm proper; O, eggs; P, mouth of or neck of cyst (all enlarged 260 diameters).

into eelworms, one such body being shown at B, with the eelworm coiled up inside (h). There were hundreds of both forms, not any larger, but many much smaller than those figured. The number of such emerged from the eggs were legion; one stout (C) I took for a female, and one thinner and longer (D) I considered was a male. Both larvæ or young animals evidently grow, for there were some larger, still stout, E, and others thin and agile, F, respectively female and male.

The sizes are maximum of larvæ or young eelworm, but there were also hosts of the form shown at G, the eelworm encysting—that is, enclosing itself in a vesicle. It, however, never loses its head, but the tail of the creature disappears by degrees, as shown at H, while the animal inside brings its head and tail together, and passes round the cyst (i), and the head in the case of the female remains intact (j). The one shown is a female, and has a vulva (k). I did not find a male cyst. The "lord" of the family, however, made stir enough in the microscopic ocean—a veritable sea serpent, and is shown at I. It is root-knot eelworm, male, *Heterodera radiculicola*. And lastly there were several gravid females. One, as shown at J, is covered all over the body with a lace like covering—that is, the flask, for the eelworm (l) lives inside and produces a vast number of eggs (m). She draws in nourishment through the mouth of the flask (n), and the flask-like body is simply a sac of eggs of the size as shown at A. Then all is over, the sac bursts because the mother is dead, and the eggs soon hatch out the young eelworms.

That was everything there is belonging to root-knot eelworm, every stage from egg to egg again, and all from one partly decayed nodule of the Vine root. I believe this is the first recorded instance of root-knot eelworm having been found on the roots of Vines, and is notable for only attacking the young tender fibrelets. We know that Cucumbers and Melons readily succumb to the pest, and Tomatoes also, but less speedily, as the roots are somewhat more resistant. The eelworm finds a fresh field in Vine roots—perhaps made tender by high cultivation.

With the life history from year to year, it will suffice to say that

the eelworm lives in the larval stage for a considerable period coiled up much after the manner of a snake, thus surviving the winter in the absence of living food-plants. I do not know what heat Vines will bear at the roots, but I have killed wireworm and grubs of the Vine weevil with a soaking of water at 115°, yet eelworm does not die under a temperature of 125°. I do not think that water at 135° would hurt Vine roots, but I should hesitate before giving a Vine border a soaking at that temperature. Such hot water may answer well enough experimentally, but treating a Vine border is quite a different affair, as the soil varies greatly in staple and retentive power.

For the reason given it has been advised to use one wineglassful (2 fluid ozs.) of Little's soluble phenyle to 3 gallons of soft water, and apply that quantity by means of a rose watering can per square yard. This solution, one part in 480 parts water, will not hurt Vine roots, and it will kill those eelworms that it reaches. This I have proved over and over again, but I should not use it on a border close and yet. Lime would be better where much animal manure or stable drainings have been used. Apply 1 lb. of best chalk lime, freshly burned, per square yard; slake with the smallest amount of water necessary to cause it to fall to fine, apparently dry flour, and spread evenly on the surface. Leave it for a night, then apply $\frac{1}{2}$ lb. of kainit per square yard, and fork in as deeply as may be done without injuring the roots. Leave for the winter, rough, and when about starting the Vines apply a dressing of dissolved bones, dry and crumbling, 4 ozs. per square yard, pointing in very lightly; and later use nitrate of soda, if a light soil; if heavy, sulphate of ammonia, $\frac{1}{4}$ oz. to 1 gallon of water, for watering with. If soluble phenyle be used at the starting of the Vines there will not be any need to apply either the nitrate of soda or sulphate of ammonia.—G. ABBEY.

GROUPING PLANTS FOR EFFECT.

WHAT TO IMITATE AND WHAT TO AVOID.

THE grouping of plants for effect at our horticultural exhibitions has, for some years now, been one of the chief attractions, and I am of the opinion that more people will be found closely scanning the groups than almost any other section of the exhibition. Much has been done by our leading societies to encourage the art, yet, in my opinion, there is ample scope for still further developments. It is many years since I first saw a group of plants arranged for effect; it was at the great Whitsuntide exhibition at Manchester. I have forgotten who staged that group, but by no means what it was like. It was composed of splendidly grown plants (I know this, because I saw them before they were put together), and so arranged that not a twig was allowed to show itself above its neighbour, a gradual slope being formed of which any thatcher might well be proud. At that period this was thought very fine, and doubtless if such men as Messrs. Wills, German, Ward, Cypher, and others had not had different ideas, we should be still going on in the same way.

The late Mr. Wills has always been accredited with doing more to improve the artistic arrangement of plants I believe than almost anyone else (and with good reason); but it must be borne in mind that the greater part of his successes were non-competitive, and being so, he had practically a free hand as regards space and selection of material. This is not so with those who compete as they are bound by the schedules. The man who, in my opinion, first struck the right note in arranging groups for competition, and led the way to the present state of things, who to-day, although we hardly hear of him, could, I honestly believe, give points to any exhibitor in this particular branch, is Mr. Samuel Thacker, of Nottingham, an amateur. This is not very flattering to professionals, but I believe it to be perfectly true. Some may assert we get nothing new now, the thing is worked out, and it must be admitted there is something in this. Yet I think there is no limit to the possibilities in this direction. The goal only wants making a little more difficult; in other words, the exhibitor has done what can reasonably be expected of him; now the schedule makers must step in and lengthen his rope. I have more to say on this later on.

"A group of miscellaneous plants arranged for effect on a given space" is usually the wording of schedules. What is effect? It may mean anything, according to the capabilities of the person asked to adjudicate. I will try to describe my idea of an effective group of plants. Before a man can say he considers anything perfect he must have an ideal in mind as to what is "perfection." I place Nature as my ideal of all that is beautiful, and everyone will admit that no work of man can compare with Nature. Well, my idea of a perfect group of plants—though, as a matter of fact, I have never seen one that quite satisfied me—is that each individual should be made to look as though it had grown in its position. I have never visited any tropical countries, but I have seen pictures, and heard them described in a way which has fairly made my mouth water, and has made me yearn to lift a solid block—say about 400 square feet—bring it home, and exhibit it at one of our leading shows, then we should have a group for effect. I have seen, in our own country, little bits which would take much beating.

Having taken Nature as our ideal we ought to try and show her at her very best when we make a group, for under natural conditions there is a tendency for vegetation to grow too thickly to permit of all the beauties it contains being seen when, as at shows, we are only allowed to stand in front and admire. It is different in its own home, where we can

wander in and out looking for the tit-bits, so all will agree that every plant ought to be so placed that it can be clearly seen from the point of observation. Then, again, we have the advantage of being able to unite forces, such as a detachment from India, one from Australia, a third from the South Sea Islands, and so on—gems from anywhere and everywhere to unite in one grand international congress; and this is without doubt a great advantage to an exhibitor. It may now be advisable to point out a few things it is better to avoid.

In the first place, never try to make a group similar to what has been seen elsewhere. Nature does not recommend this, and herein lies its greatest charm. No one ever saw two pieces of natural scenery exactly alike, so strive for originality. Never attempt to make a pattern, as is done in carpets. I believe this is one of man's worst attempts to be artistic. In plant arrangements you often see Nature admirably represented in the body of the group, and the man, true to his mechanical instinct, steps in to improve by placing round its neck a frill of perhaps blue Lobelia, or anything according to fancy. Never take too many plants to a show, as one of the worst and commonest of mistakes is overcrowding. Avoid a late start. Of course there are men who pride themselves on being able to arrange a group quickly, and no doubt some do take longer than others. But a good start often saves worry at the finish, as this state frequently leads to disaster. If there is time to spare it can generally be used in "touching up," which otherwise would have to be left undone.

It is necessary to use many artificial aids in making groups, but not one must ever be visible. Nothing mars the effect more than to see bare pots, ugly stakes, matting, drain pipes, tables, flower stands, and other things. Another common error is going to see what fellow exhibitors are doing, for it distracts the mind, and prevents preconceived ideas bearing fruit. Never let a plant touch its neighbour, or peculiar effects are liable to result. For example, I have seen a beautiful Croton made to look as if *Lilium auratum* blooms were growing on it, splendid heads of *Hydrangea paniculata* peeping from a clump of Maidenhair, and the tops of graceful Palms rising from a mass of red, white, and blue. Is this right? Certainly not.—(Read by MR. G. WILSON, Swanland Manor, at a meeting of the Hesse Gardeners' Association.)

[Though we regard Mr. Wilson as a master in the art of grouping plants, we join in the tribute which he deservedly pays to Mr. Samuel Thacker, who has produced the best effects with limited means that we have seen at any show.]

(To be continued.)

THE YOUNG GARDENERS' DOMAIN.

NERINES.

IN answer to "Parvo," regarding Nerine culture, especially in relation to the temperature stated on page 367 last vol., I may say that the temperature of 45° as a night minimum, and 80° to 85° as a day maximum with sun heat, and 50°, or a little above the night minimum by the use of fire heat on dull days, has the following advantage—with a due proportion of light, moisture, and food material it would tend to stimulate their growth, increase the assimilation in the leaves, and ultimately produce bulbs which would be richer in matter for the origin and development of floral organs.

I think we should heartily encourage this work of the leaves, and one way of doing so is to maintain a genial temperature by "bottling up" the sun heat, although in doing so the temperature may rise to 85°. In giving this number I have in view a shallow structure with the plants near the glass. In a large house the circumstances might be altered to suit the case, especially if other plants were to be considered. A Peach house shelf would be a good place for Nerines after flowering, and by careful watering and feeding a fair degree of success would be attained, but I question whether the flowers would be so large, their colour so brilliant, or their texture so strong and lasting as would be attained by giving the plants more liberal treatment, growing them in a structure specially suited to afford them a higher temperature. Regarding the influence of temperature on the longevity of a bulb I can give no distinct opinion.

The species which "Parvo" mentioned are about the best. According to the Kew "Hand-list" *Nerine crispa* is synonymous with *N. undulata*, and *N. corusea* with *N. sarniensis*, the latter in each case being the correct name. Three of the named garden hybrids are worth special notice—*N. elegans* (*flexuosa* × *rosea*), *N. Meadowbanki* (*sarniensis* × *Fothergilli*), and *N. Manselli* (*flexuosa* × *Fothergilli*). The last is a late bloomer, flowering towards the end of November, and continues to flower in early December. It is slightly lighter in colour than *sarniensis*.—X. L. C. R.

STATICES.

IT seems to be a hard and fast rule with some growers to rest all plants alike through the winter, and I am of the opinion that this is the cause of many failures, especially with Staticeae, which do not appreciate being rested during the winter months. I do not wish to infer that they must be kept growing at the same rate in the winter as during the summer, but simply that they should just be kept steadily moving. My observations teach me, too, that Staticeae like a closer atmosphere than do many greenhouse plants, but they must have a little air, and be kept close to the glass, though not too much exposed to the bright sun, or they will quickly fall a prey to red spider, and the leaves will assume a sickly, rusty appearance.

Staticeae may be easily propagated from cuttings made of the shoots in early spring, which should be inserted singly in 3-inch pots filled with a mixture of good loam and sand in equal parts. They must be kept under a bell-glass or in a propagating frame in a temperate house, when roots will soon be emitted. About the latter end of June or the beginning of July the young plants may be transferred to 5 or 6-inch pots, using a compost of three parts of fibrous loam and one part of coarse sand. Stand them in a temperate house, and syringe every afternoon unless the weather be very dull and damp. During the winter months they may be kept in a rather lower temperature say, 45° to 50°, on a shelf near the glass if possible, as they will then form stiffer and sturdier growths than would otherwise be the case. As abundance of water is essential during the growing period the drainage must be efficient, or stagnation at the roots will bring partial or total collapse. When in flower they must not be syringed, or the blooms will damp. When the shoots have grown sufficiently long they should be trained down towards the rim of the pot, so as to form shapely plants. It will be found advisable not to allow the young shoots to flower too much the first season, as it interferes materially with their growth.

Thrips and red spider will be found troublesome, and do serious mischief unless attended to with promptitude. Great care must be exercised in using insecticides, or they will cause injury to the leaves, and thus partially spoil the beauty of the plants.—ONE OF THE SCHOOL.



HARDY FRUIT GARDEN.

Cleansing Fruit Trees of Moss and Lichen.—When fruit trees and bushes are infested with moss and lichens they present an unsightly appearance, and means ought to be adopted which will eventually clear the stems, branches, and shoots of these incrustations. Apparently no harm results from their presence, but if allowed to remain it is certain that insects will form a lodgment, to the detriment of the health and vigour of the trees. If more than ordinarily thick incrustations are present, scrape off the thickest portions with a piece of hoop iron or other suitable tool, but avoid cutting or wounding the bark.

The operation is best carried out when the trees are moist. This effected, well brush or wash the trunk and branches over with hot lime-wash, which decomposes the vegetative growth and destroys any insect life present. The slenderer shoots of trees and bushes may, if necessary, be cleansed by distributing over them finely powdered lime in damp or foggy weather. The lime dressing is excellent for Gooseberries and Currants, as it will not only cleanse them from green growths, but of scale or red spider, while that which falls to the ground acts beneficially, destroying the larvæ of caterpillars and neutralising the acidity of over-rich soils. Brine applied on the trunks and larger branches with a scrubbing brush is also excellent.

If the glaring whiteness of lime is objected to, this may be toned down by the addition of soot. Some prefer the further addition of sulphur, about an equal quantity being used with the lime and half soot, the whole mixed in a soapy solution, and applied to the convenient parts.

Destroying American Blight.—Apple trees affected with American blight are also usually attacked with canker, the wounds in the bark and the excrecences formed by it providing safe refuge for the insects. The cankered parts may with advantage be pared smoothly, then painted over with a mixture of Stockholm tar and soft soap, or the latter and petroleum, a pint to the gallon of strong soap solution. Brush well into the affected parts. Gishurst compound and other in ecticides may be employed if preferred, but in bad cases a petrolum emulsion, formed either with soft soap or castile soap, is the best.

A General Cleanser.—Trees or bushes that do not require special efforts to rid them of pests should be sprayed with Coates' soda and potash solution. This is made by dissolving 1 lb. of caustic soda and 1 lb. of crude commercial potash in 10 gallons of water. This preparation ought only to be used when the trees are dormant. It is excellent for thoroughly cleansing the bark of all infestations, whether insect pests or mossy or lichenous growths.

Outdoor Vines.—*Pruning.*—Mild weather should be chosen for carrying out the necessary pruning required by Vines on outdoor walls or trellises. Aged branches with elongated and knotty spurs might with great advantage be cut out and their places taken by vigorous young canes that are well ripened. It requires some forethought to have suitable young canes to take the place of old rods. Those which may be required should be selected during the growing season, and shortened to about 4 feet at the winter pruning. As a rule new canes intended to renovate the Vines ought to be originated as near the base as possible, but to fill vacancies or to substitute new growth for old in any part, well ripened lateral growths may be laid in, pruning down to good firm buds.

The majority of the lateral shoots on the spurs must be shortened to one or two buds, but seize the opportunity where two or three laterals issue from one main spur to remove those furthest away from the main stem. In this way spurs are prevented from extending too far, there is

less danger of crowding, and the appearance of the Vines is greatly improved. However desirable it may be to furnish the Vines with vigorous young wood, instead of useless old, the former must not be crowded, but so disposed that sufficient room for the lateral growths bearing fruit in summer can be found.

Cleansing.—After the pruning, the branches, spurs, and canes ought to be well washed with a softsoap solution, 4 ozs. to the gallon of water, or some insecticide of similar strength, as Vines growing on hot, dry, outdoor walls, are subject to red spider in summer.

Peaches and Nectarines.—The principal pruning of these may be deferred for the present, but as a means of checking the growth of trees planted on a warm aspect it is desirable that the young wood should be unloosed from the walls so that it may have the benefit of the retarding influences of the cold weather. The main branches are better left secure, otherwise they may be damaged by the wind, which will not injure the young and willowy shoots, but harden and ripen their tissues.

Heading Down Trees for Grafting.—Healthy, but fruitless Apple trees, intended to be grafted with superior varieties, may have the strong branches headed down to near the point selected for the insertion of grafts.

Scions for Grafting.—These ought to be carefully selected, tied together in separate varieties, labelled, and laid in in moist soil under a north wall. In that position they will be kept in a dormant condition until the period for grafting arrives.

FRUIT FORCING.

Cherry House.—Where the house has been closed since the middle of December, and frost excluded, fire heat may be applied to secure a temperature at night of 40° when cold, 45° when mild, and 50° by day, allowing an advance of 5° to 10°, or even 15° from sun heat, but not without a free circulation of air at 50°, and admitting it abundantly in mild sunny weather. Syringe the trees occasionally, but do not keep them dripping with water, and take care that they become fairly dry before night. If the roof-lights have been off the borders will not require water for some time to come, yet the soil must be kept in a moist condition. Trees in pots must be regularly attended to, not allowing the soil to become dry, but afford a supply when needed. If any of the trees are unsuitable now is a good time to introduce new ones in their place. Trees that have been grown against and trained to a south wall for three or four years, and lifted occasionally, are the best. Early Rivers, Black Tartarian, Governor Wood, and Elton are suitable varieties. Empress Eugénie, a variety of the May Duke race, is very fine for forcing in pots.

Cucumbers.—Seed must be sown to raise plants for the early spring supply of fruit. We still hold to a carefully selected stock of Telegraph as an all-round variety. There are many excellent varieties, and every grower has his particular favourite. The seeds may be sown singly in 3 inch pots, in a rich mould, which has been scalded some time previously with boiling water, especially in places liable to attacks of eelworm, leaving room for top-dressing the plants when they require it. Plunge the pots in a brisk bottom heat (90°) near the glass, and cover with a pane of glass, which must be removed as soon as the plants appear. Where there is not the convenience of a hotbed, the pots may be stood on a shelf near the roof, covered with a pane of glass, and in a genial atmosphere, with a night temperature of 65° to 70°, rising to 80°, 90°, or more with sun, the plants will come up sturdily. A little air may be given at 75° in very closely glazed houses, but be careful to avoid a check of any kind, especially sudden cooling or drying of the air.

Figs.—*Early Forced Trees in Pots.*—Those started in November or early December will need the temperature gradually raised to 60° at night, but 5° less in severe weather, and 65° from fire heat by day when the growths are developing, with 70° to 75° or more from sun heat. Avoid, however, a high temperature by artificial means, as the sturdier and shorter jointed the young shoots and the stouter the leaves can be kept the greater will be the chances of a satisfactory first and second crop. The first crop is best secured by keeping the growth somewhat closely pinched. Syringe the trees twice a day, except in dull weather, when damping in the morning and early afternoon will be sufficient, as less moisture will be needed where the fermenting materials aid in furnishing the heat, than where reliance is solely placed on fire heat, and avoid a saturated atmosphere in dull weather. As the fermenting materials settle firm them well about the pots, and add more, taking care that the heat does not exceed 70° to 75° about the pots. Place some turves, about 2 inches thick, grass side downwards around the rims and on the surface of the pots, extending inwards about 2 inches, so as to form a dish, and outwards over the rim towards the fermenting materials, with a view to encourage the surface roots to extend. Water the trees and turves with weak liquid manure, and the whole surface will soon become a mass of roots, and they may then, the hollow or dish being filled with rich material, be fed to any extent with liquid stimulants, or a sprinkling occasionally of bone superphosphate five parts, nitrate of potash three parts, and gypsum one part, mixed and kept perfectly dry, can be applied.

Fig Trees Planted in Borders.—The first house of these should now be started, and the fruit will be ripe towards the end of May or early in June, when the varieties consist of Brown Turkey, Pingo de Mel, and White Marseilles. The first is far away the best Fig for general purposes. The borders should be brought into a thoroughly moist condition by repeated waterings, but not going to the extreme of making them sodden. Syringe the trees in the morning and early afternoon when fine, or er-

wise only damp the floor and borders so as to maintain a genial atmosphere, for one that is close and damp has a tendency to induce soft growths and is unfavourable to the first crop of fruit. Maintain a night temperature of 50°, 55° by day artificially, and allow an advance of 65° from sun heat, with a free circulation of air.

Melons.—Plants raised from seed sown now will ripen fruit by the end of April or beginning of May in light and well-heated structures, not otherwise, and contingent on the weather being favourable to their growth. The seed should be sown singly in 3-inch pots, half filled with fibrous loam and leaf soil, plunging the pots in a hotbed of fermenting materials, and covering them with a pane of glass, which must be removed as soon as the plants appear through the soil. Where there is no bottom heat the pots may be placed on shelves about 1 foot from the glass in a house with a temperature of 60° to 65° at night, and 70° to 75° by day artificially, with a piece of glass over each, and in this case the plants will be hardier and sturdier, and less liable to suffer from damp, than those in a hotbed. When the seedlings have made an inch or two of stem they should be top-dressed with warmed soil and kept well up to the glass or in plenty of light, so as to secure a sturdy growth. Varieties are plentiful, and growers have their special favourites, so that selection would be superfluous.

THE BEE-KEEPER.

MOVING BEES.

WITH the advent of the New Year and the sun at its lowest ebb the bees are clustered in their hives. It will be advisable for bee-keepers to make an examination of the position in which the hives are placed, so that they may be removed to a more suitable spot if necessary. Beginners often make a mistake in carrying out this operation, but it is a well-known fact to bee-keepers of experience that bees may be moved with impunity at any season if certain rules are carried out. For instance, a strong colony of bees may be removed from its original stand during the height of the honey flow; but it must be done at night, after the workers have returned to their hive. The entrance must be closed, and the bees should not be liberated within two miles of where they previously stood, or many of them would return, and thus be lost.

The above shows how important it is that any alterations that may be necessary in the apiary, whether large or small, should be done during the short days of winter, when few bees are on the wing, as at this season all that is necessary to insure success is care and steadiness in handling the hives, and not a bee will escape. If the weather is very mild it will be advisable to close the entrance to the hive for a short time; the operator need then have no fear of being molested by the bees, in case of an accidental shaking of the hive.

POSITION OF STOCKS.

Before moving the bees it will be advisable to study the position in which they are to stand. If possible choose a sheltered spot, where they are protected from high winds. Bees thus favourably situated invariably come out strong in the spring, owing to the bees commencing to breed early, and thus early swarms are obtained. The favourite position faces south-east, with the protection of a wall or fence at the back of the hives, as the sun then shines on them from early morning till late in the afternoon. If there is also a slight shade from the trees growing a few yards away so much the better. Local conditions, however, govern the result to a considerable degree.

If extracted honey is the chief aim of the bee-keeper we would advise him to study his own convenience even more than the position of the stocks, as, taking one season with another, it will be found that as much honey will be obtained from a colony facing due west as from a stock in any other position, so long as the all-important shelter is provided.

OTHER ASPECTS FOR HIVES.

The majority of the hives in our apiary face due west. They are not placed in this position because we consider it is the best—as a matter of fact many bee-keepers would consider it the worst, because we have very high winds from that quarter. Other stocks are facing various directions, but all have the shelter of a fence of some description. The result is much the same from one as the other. The reason the majority of our stocks are in what many would term an unfavourable position is for the convenience of extracting. It is a great advantage—in fact, it is a necessity—when honey is becoming scarce, to be able to extract it from the combs in a building where the bees cannot gain admittance. In our case it is the convenience of a building that has caused us to have our bees near at hand for manipulating, in preference to taking them some distance away to what may appear a more suitable spot, but from experience it would be only so in theory.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Cleome heptaphylla (*M. G. R.*).—This plant is of moderate height, with seven-lobed leaves and white flowers, the long purplish stamens of which contrast with the spreading white petals. The flowers are produced freely, and when well grown the plant possesses a light graceful appearance. It can be treated similarly to many other annuals from warm climates—namely, the seeds are sown in heat, and the young plants grown in light soil in the stove or placed during the summer in the conservatory. It flowers late in summer and autumn, and lasts some weeks in good condition with ordinary care.

Potting Liliun auratum (*H. P. J.*).—Though fresh sound bulbs often answer if potted at once, or planted as soon as the ground is in suitable condition, those which are more or less shrivelled as often fail to produce satisfactory plants. It is an excellent plan to place fresh cocoa-nut fibre in boxes or flat baskets, and in this press the bulbs a third to half their depth, and there let them remain in the potting shed for a few weeks, or until incipient roots are visible at the base of the bulbs, then if they are potted, or planted in a suitable medium, good growth may be expected. After potting it is a good plan to plunge the pots over their rims in cocoa-nut fibre refuse, or other light damp material, in a frame, or even outdoors if the pots are stood on a base impervious to worms, and drenching rains are thrown off the plunging bed by a shutter or other means.

Winter Dressing Fruit Trees (*Kewhurst*).—The caustic soda and potash solution advised in Cousins' "Chemistry of the Garden" is best applied by means of a spraying apparatus. It may, however, be applied by means of a half-worn, clean, painter's sash-tool, but not in an excessive amount, it sufficing to just wet all the parts of the tree and reach into every crevice, so as to get at the hibernating foes, such as American blight and codlin moth; it will kill most pests and their eggs, and also free the trees from lichen and moss. The American blight should also be seen to in summer, and the infested parts touched with methylated spirit by means of a small brush, and the codlin moth prevented by spraying with Paris green shortly after the Apples and Pears are set. This will also make an end of leaf-eating and fruit-devouring caterpillars.

Forced Figs in Pots (*Manouian*).—As the terminal buds have started, you must take advantage of any mild weather that may prevail to increase the mean temperature of the house, as when Figs are fairly started into growth they delight in heat, moisture, and light. The glass must be kept clean, and air admitted so as to prevent the glass being continually covered with moisture, but seek increase of temperature from fire heat combined with sun heat in preference to maintaining a high temperature in dull weather, and especially at night, that will cause any great advance in growth at those times. Maintain a night temperature of 55° to 60°, ventilate a little at 70°, losing no opportunity of admitting a little air when the morning promises an increase from gleams of sun, and close sufficiently early for the temperature to run up to 80°. Syringe the trees and walls twice a day on fine days, but when the weather is dark and wet omit the afternoon syringing and damp the floors in the evening instead, as the trees are weakened and the foliage made soft by keeping them wet during the night, therefore always allow the trees to become fairly dry before nightfall. Be careful not to allow the heat about the pots to exceed 70° to 75°, and if the materials are heating too violently turn them as a means of reducing the bottom heat, but it ought to be kept steady.

Costus igneus (*T. Long*).—The illustration and note on page 11 will we hope give you all the knowledge you require about this plant, which it is trusted you may in the near future see in flower, when no one could fail to admire it.

Tuberous-rooted Begonias from Seeds (*Nemo*).—Prepare pans by well draining and then filling with a mixture of loam and leaf soil sifted fine, adding a sprinkling of silver sand. Make the surface perfectly level, and give a gentle watering, or enough to well moisten the soil. It is a mistake to surface over with sand. The seed should be sown about three hours after watering the pan, quite on the surface, thinly, and regularly. Avoid letting it get together in patches. It will germinate most surely if given the benefit of a brisk, moist, bottom heat. Cover the pans closely with squares of glass, and shade till it is seen the seeds have germinated, after which light should be gradually admitted, but no sunshine ought to reach the seedlings. The soil must be kept uniformly moist, but no water should be applied to the surface. Whenever necessary partially immerse the pans in a pail, tub, or tank of lukewarm water, the soil thus becoming moistened upwards. Tilt the glasses slightly, when the seedlings are plainly visible, by way of a preventive of damping. Seedlings should be pricked out directly they can be moved with a pointed stick in one hand and a small forked stick, for lifting them out with, in the other.

Propagating Chrysanthemums (*Journeyman*).—Several methods are adopted in rooting the cuttings, which should be about 3 inches long. The best system is that of placing them under hand-lights or in a propagating frame, placed in a house where a temperature of from 40° to 50° is maintained. These should be on the side stages, and as near the glass of the roof as possible to prevent the cuttings becoming drawn. Some growers root their cuttings in a cold frame, but they are more liable to suffer from damp; others in pots on shelves in an ordinary greenhouse, but in such positions they often flag very much. The cuttings may be inserted five or six round the edge of a 5-inch pot. Equal parts of light loam and leaf soil, with a free admixture of coarse silver sand, the whole passed through a half-inch sieve and thoroughly mixed, is the best compost. Sprinkle a little silver sand on the surface of the soil, to be carried down by the dibber for the cuttings to rest on, the rooting being quicker among sand. The soil should be pressed firmly round each cutting, particularly its base, and a gentle watering given through a fine-rosed watering can. Stand the pots on fine-sifted ashes for securing a cool moist foundation, and excluding air. The lights must be kept closed until roots are formed, with the exception that they may be taken off for an hour in the morning to allow for the dissipation of moisture, and in the evening the glass should be wiped dry. Shading will not be required. In about a month the cuttings will have rooted, when admit a little air by tilting the light slightly at first, and increasing until they can be safely removed. But little water will be required during the process of rooting, yet the soil must be kept sufficiently moist for the support of the cuttings or plants. Some growers prefer to root the cuttings singly in very small pots.

Compost and Manures for Chrysanthemums (*T. C.*).—A successful grower and exhibitor was favoured with the following analysis of the Chrysanthemum plant.

Potash	...	...	...	...	...	...	16.23
Soda	...	...	...	...	...	...	10.39
Lime	...	...	...	...	...	...	26.28
Magnesia	...	...	...	...	...	...	10.22
Iron	...	...	...	...	...	...	3.66
Phosphoric acid	...	...	...	...	...	...	19.52
Sulphuric acid	...	...	...	...	...	...	4.65
Silica	...	...	...	...	...	...	5.99
Chlorine	...	...	...	...	...	...	3.06
							100.00

Nitrogenous substances (albuminoids) ... 2.92

In preparing compost he cut the turf 2½ inches thick from an old pasture in the autumn; soil hazel or yellow loam, neither heavy nor light, stacking it grass side downwards, sprinkling on each layer of turves quarter pound of basic slag, 2 ozs. of kainit, and a small dredging of soot per square yard. Each layer of turves was so treated to the top of the stack, and in spring, when cut down for potting, chopping from top to bottom vertically, the whole was mixed together, to secure an even blend. The compost came out quite mellow, enriched, and free from pests. If the turf had much herbage the basic slag was increased to half pound. For summer use the grower used a mixture composed of

Bone superphosphate, dry and crumbling	...	...	5 lb.
Nitrate of potash, crushed fine	...	...	3 lb.
Sulphate of magnesia	...	...	1 lb.

This was mixed and kept dry. About a teaspoonful was blended with a handful of soil, and half of it applied to a pot after the final potting about every three weeks. Between times, if more vigour was needed, the plants were watered with nitrate of soda and sulphate of ammonia, half ounce to 3 gallons of water in alternate weeks. Thus the plants had a top-dressing of the mixture one week, the next a watering of sulphate of ammonia, and the following week of nitrate of soda, and then again the top-dressing. But of course he acted in accordance with the state of the plants, and avoided the error of overstimulation in the earlier stages, or, indeed, at any time. He mixed a little leaf mould and crumbled manure with the loam at potting time, exercising judgment in this and other routine matters, and, after all, sound judgment is more potent than anything else in growing fine Chrysanthemums.

Treatment of Eulalia japonica (Amateur).—Plants that died down after use and have since been kept in a cool house, may be removed to any structure where gentle warmth is maintained. They will soon commence to push up new growths, when the plants may, if increased stock is needed, be divided into two, three, or more pieces according to their size. These plants are most useful in 5, 6, and 7-inch pots, and grow freely in any rich soil—good loam, sand, and one-seventh of manure will suit them very well. If gentle bottom heat can be given them after division they will soon become established, when cooler treatment will suit them well.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (L. R.).—1, Cox's Orange Pippin; 2, Golden Winter Pearmain; 3, Adam's Pearmain; 4, Hanwell Souring; 5, Hambledon Deux Ans; 6, Lord Derby. (C. H. S.).—1, Newton Wonder; 2, Warner's King; 3, Gloria Mundi. (F. W. H.).—1, Winter Nelis; 2, Easter Beurré; 3, Catillac. (G. H. F.).—1, Bramley's Seedling; 2, Wadhurst Pippin; 3, New Hawthornden; 4, Roundway Magnum Bonum; 5, unknown. (W. W. W.).—The Apples you send are all so inferior in quality that we are of the opinion they never could have had recognised names. (J. V. C.).—Pears: 1, Winter Nelis; 2, Easter Beurré. Apples: 1, Round Winter Nonesuch; 2, Lane's Prince Albert; 3, unrecognisable and worthless; 4, Blenheim Pippin.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. G.).—1, a fine form of *Cypripedium insigne*, but not, as you will observe, equal to the variety figured on page 5; 2, *Lælia autumnale*. (T. E.).—1, *Adiantum pedatum*; 2, *A. euneatum grandiceps*; 3, *A. Pacotti*; 4, *A. euneatum* var.; 5, *A. gracillimum*; 6, *Asplenium proliferum*. (Midlander).—1, *Abies Douglasi*; 2, *Taxodium distichum*; 3, *Retinospora plumosa aurea*; 4, specimen insufficient, possibly *Cupressus Lawsoniana erectus viridis*; 5, *Thuopsis borealis*; 6, *Thuia gigantea*. (P. F.).—*Cattleya Walkeriana*. (T. Taylor).—1, *Euphorbia splendens*; 2 and 3, send when in flower; 4, *Agathæa cœlestis*; 5, specimen withered, *Eupatorium Weinmannianum*; 6, a *Salvia*, flowers dead; 7, *Primula verticillata*. (Young Gardener).—Of the Ferns the Maidenhair is *Adiantum Pacotti*; the Gold Fern *Gymnogramma chrysophylla*; the finely divided frond, *Asplenium viviparum*; the other *Onychium japonicum*. The Orchid is *Zygopetalum Mackayi*; and the greenish white flower we think to be the parasitical leafless plant, *Orobanchë major*, but you give word of explanation relative to its habit of growth. We cannot name the specimens under numbers because these are coiled up inside the paper round the stems instead of being visible without untying the ligatures, which are made so tender by the wet moss that they tear at the slightest movement. Be so good as to read and follow instructions when you send other specimens to be named.

TRADE CATALOGUES RECEIVED.

Cooper, Taber & Co., Ltd., 90, Southwark Street, London.—*Wholesale Seed Catalogue.*

Dicksons, Ltd., Chester.—*Seeds.*

Fisher, Son & Sibray, Ltd., Handsworth, Sheffield.—*Seeds.*

J. Laing & Sons, Forest Hill, S.E.—*Seeds.*

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COVENT GARDEN MARKET.—JAN. 4TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Cobs ...	45	0 50	St. Michael's Pines, each	2	6 50
Grapes, lb. ...	0	10 16			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0 0	Onions, bushel ...	3	6 40
Beet, Red, doz. ...	1	0 0	Parsley, doz. bnchs. ...	2	0 30
Carrots, bunch ...	0	3 0	Parsnips, doz. ...	1	0 0
Cauliflowers, doz. ...	2	0 30	Potatoes, cwt. ...	2	0 40
Celery, bundle ...	1	0 0	Salsafy, bundle ...	1	0 0
Coleworts, doz. bnchs. ...	2	0 40	Scorzoneria, bundle ...	1	6 0
Cucumbers ...	0	4 0	Seakale, basket ...	1	6 10
Endive, doz. ...	1	3 16	Shallots, lb. ...	0	3 0
Herbs, bunch ...	0	3 0	Spinach, pad ...	0	0 0
Leeks, bunch ...	0	2 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 19
Lettuce, doz. ...	1	3 0	Tomatoes, lb. ...	0	4 0
Mushrooms, lb. ...	0	6 0	Turnips, bunch ...	0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0 36	Foliage plants, var., each	1	0 50
Aspidistra, specimen ...	5	0 10	Lilium Harrisii, doz. ...	24	0 36
Crotons, doz. ...	18	0 24	Lycopodiums, doz. ...	3	0 40
Dracæna, var., doz. ...	12	0 30	Marguerite Daisy, doz. ...	9	0 12
Dracæna viridis, doz. ...	9	0 18	Myrtles, doz. ...	6	0 90
Erica various, doz. ...	9	0 24	Palms, in var., each ...	1	0 15
Euonymus, var., doz. ...	6	0 18	„ specimens ...	21	0 63
Evergreens, var., doz. ...	4	0 18	Pelargoniums, scarlet, doz. ...	8	0 12
Ferns, var., doz. ...	4	0 18	Solanums, doz. ...	6	0 12
„ small, 100 ...	4	0 80			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	8	0 to 12	Lily of the Valley, 12 sprays	1	0 to 2
Asparagus, Fern, bunch ...	2	0 26	Marguerites, doz. bnchs. ...	6	0 80
Azalea, white, 12 sprays ...	1	0 13	Maidenhair Fern, doz. ...		
Bouvardias, bunch ...	0	4 0	bnchs. ...	6	0 80
Carnations, 12 blooms ...	2	0 30	Narcissus, doz. bnchs. ...	5	0 60
Chrysanthemums, per bch. ...	0	6 20	Orchids, var., doz. blooms	1	6 90
„ specimen ...			Pelargoniums, doz. bnchs. ...	6	0 100
„ blooms, per doz. ...	4	0 60	Poinsettias, doz. blooms ...	12	0 150
Eucharis, doz. ...	4	0 60	Roses (indoor), doz. ...	2	0 40
Gardenias, doz. ...	2	0 30	„ Red, doz. ...	6	0 80
Geranium, scarlet, doz. ...			„ Tea, white, doz. ...	3	0 40
bnchs. ...	8	0 12	„ Yellow, doz. (Perles) ...	2	0 80
Lapageria (white) ...	1	6 20	„ Safrano (English) doz. ...	2	0 26
„ (red) ...	1	0 13	„ Pink, doz. ...	5	0 60
Lilium lancifolium, white ...	3	0 40	Smilax, bunch ...	2	6 30
„ pink ...	3	0 40	Violets ...	1	0 26
„ longiflorum, 12 blooms ...	8	0 10	„ Parme, bunch ...	4	0 60
Lilac, bunch ...	5	0 60			



FEEDING SHEEP IN WINTER.

THE tendency nowadays is all towards early maturity; foreign competition has knocked all the profit off the four-year-old bullocks and the two-year-old wethers, and whether it be beef or mutton, all the cry is for small joints, not too fat, and plenty of them.

Twenty years ago good lamb was rarely seen before Easter, and never was it offered in anything but quarters, whilst a leg always had to be specially asked for. Now as early as May or even April legs and loins of well-fed and matured lamb are to be seen hanging in any butcher's shop; and can we wonder that the demand for mutton, fat and comparatively tough, unless well hung, should fall off during the summer months, if young and succulent, but nevertheless substantial, joints can be had for a very small increase in price? for 1d. or 1½d. per lb. would easily cover the difference.

Of course all sheep will not come to maturity at the same age, but it is merely a question of arithmetic whether a sheep is worth keeping at all over the age of fifteen months, except for breeding purposes.

In any case, when Christmas is turned, it is time that last year's

lambs, whether they are to go off fat from turnips or from summer pasture, or even to wait and make shearlings for Christmas again, should receive more forcing treatment than is always advisable during the autumn. Different classes of sheep are suitable for different purposes. The early maturing black-faced breeds, such as the Hampshire Down, will stand much more forcing and richer food than the heavier breeds up to a certain age, but we have found the latter make the better sheep at a year old, because they keep sounder on their feet.

The fact is sheep are like horses and all other animals, they cannot stand heavy feeding for too long a period, and wethers which are to be kept to twenty months old, must not be highly fed until they have passed the tenth month of their age. By high feeding we mean the use of foods calculated to form flesh and fat rather than bone. The mature animal must be built up first before it is fed; the young prematurely forced animal must be killed as soon as ready for market, for if allowed to pass the age of what we may here call premature maturity, there is a danger of deterioration, and a possibility of never reaching again the same standard of excellence.

It therefore behoves us at this period of the year to look carefully over our flocks, and see that we are not carrying over too long sheep which are now at their best, and that those which are capable of more improvement are pushed on to a profitable sale at the earliest opportunity.

So much depends on the staple food of a feeding flock that it is difficult to recommend a common ration of artificials. Where Turnips are plentiful, and form the chief food, a fair proportion of bulky dry adjuncts, such as dried grains or malt culm, added to cut (or chaffed) straw should still be used, particularly during periods of sharp frost, in addition to a due allowance of oil cake and corn.

For feeding sheep, with Turnips *ad libitum*, we think the following an excellent dry ration for every ten sheep per day:—

- 2 lbs. dried grains or malt culms,
- 3 lbs. decorticated cotton cake, ground fine,
- 2 lbs. beanmeal,
- 1 lb. linseed cake.

As much cut straw as they will consume is mixed with the above and 2 ozs. of flowers of sulphur per week. This ration may gradually be increased by the addition of more oil cake, but not more than 5 lbs. altogether, and perhaps the addition might be safer if given in the form of linseed. The mixture above mentioned works out to 0.8 lb. per head per day, and the 5 lbs. additional would bring it up to 1.3 lb. per head per day, and this is as much artificial food as a sheep will pay for, except in the case of pedigree rams, which we need not consider in connection with feeding for mutton only.

The artificials may be given all mixed together, but when the amount reaches 1 lb. per day it will be found better to give it in two meals instead of one, and the cakes are better given separately from the grains, culms, or beanmeal. These latter would be very useful to scatter over the cut roots left in the troughs in the forenoon. The careful shepherd likes to keep his feeding sheep in a quiet and satisfied condition, and when after lying down peaceably for an hour or two they get up and go to the trough, if they find something attractive there they eat for a few minutes and then lie down for another rest period; but if they find nothing to satisfy them they wander about, disturb others which are resting, and soon the whole fold is up and on the alert.

Some shepherds give the cake ration first thing in the morning, and there is good reason for this when the animals have been, as they are during the short days, without food for fifteen hours; but we should ourselves prefer to give it as the last meal instead of the first, especially in fine frosty weather, for the solid food with its percentage of oil helps to keep the body warm during the night, and besides this it prevents the sheep eating too many roots towards the close of the day. Roots which contain such a large percentage of water cannot be good for animals to sleep upon, and in this connection we must advise the shepherd or some efficient

substitute always to visit the fold about 9 or 10 P.M., not only to see that none are on their backs, but to set all up on their feet, and give them a turn round the fold. Lying still the whole night on cold or wet ground without moving is a fruitful source of ill amongst even such hardy things as sheep.

We have presumed that Turnips are plentiful and hay comparatively scarce. Where these conditions are reversed the dried grains or malt culms may be dispensed with, as good hay will answer the same purpose. The oil cake, however, should be a necessity, and the beanmeal discarded in favour of Barley or Maize—i.e., if the staple food of the sheep be hay consumed on grass. To sum up. The more roots the more nitrogenous foods and fat, the less roots the more carbonaceous foods, such as Maize or Barley, but good sound cake is always in the right place.

WORK ON THE HOME FARM.

The weather is still open. Christmas promised to be seasonable, but the frost was very temporary, and insufficient to have much effect on heavy soil. It is now as mild as ever, and ploughing goes on merrily where there is any left to do. We are ploughing close up behind the sheep-fold, and are thinking of cross-cutting fallows soon unless we have a change.

Of course there will soon be need to relieve the yards of a little muck, but we prefer to keep that work in reserve for frosty weather. The question is, Will there be any? Perhaps in April or May, just when it is not wanted.

We are scotching and trimming the various hedges, those next the fallows being done first; we can then plough round close up to the fence turning the furrow from it. A man sent round the field with a fork will soon shake the sod out further from the hedge, where it can be dealt with by the drag and harrows later on. After cleaning, the furrow may be ploughed back again to the fence. Field corners may be dug now, which could not have been easily done when the land was so hard and dry.

Wheats are looking fairly well, but larks are still doing mischief. We are afraid Wheat may lose root in early spring. When walking over it we find the land not solid enough, and the roller must be used at the earliest opportunity. Though it might not suit everybody, we should rather like a good covering of snow, and then a month's frost. More moisture is urgently needed, for springs are still low, and very unfit to meet another dry summer.

We have a man salving the ewes; he declares them to be rather low in condition, so we shall put them with the gimmer hoggs, and give them cut Turnips for six weeks. Ewes may easily be overfed before Christmas, but not after. If an ewe has a good back at lambing time she can well rear lambs, for there is some spare flesh to milk off.

METEOROLOGICAL OBSERVATIONS.

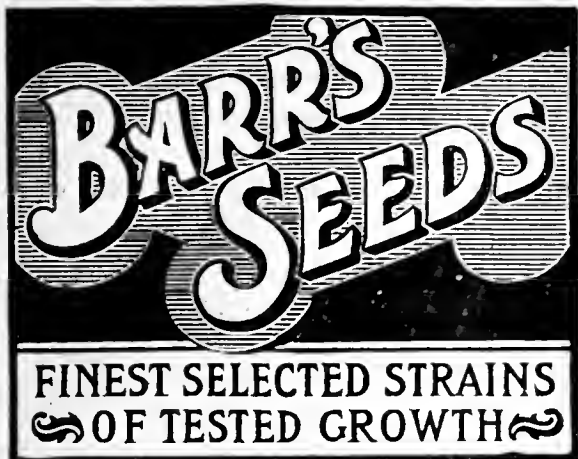
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. December.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	.... 25	30.413	44.0	41.2	S.	40.0	48.9	35.6	54.8	31.3	—
Monday	.... 26	30.168	47.2	45.3	S.W.	41.3	54.8	42.6	54.9	34.7	—
Tuesday	.... 27	29.619	54.6	47.4	S.W.	43.0	55.2	46.7	57.9	44.4	0.750
Wednesday	.. 28	29.556	39.1	38.0	S.W.	43.9	46.6	38.8	56.8	33.7	0.029
Thursday	.. 29	29.312	46.7	45.2	S.	42.0	50.7	35.7	55.8	20.2	0.092
Friday	..... 30	29.683	37.9	34.8	N.	42.9	40.0	37.6	56.1	32.0	—
Saturday	.... 31	29.746	37.9	35.4	S.E.	40.8	45.0	27.3	45.5	23.2	0.212
		29.785	43.9	41.0		42.0	48.7	37.8	54.5	32.8	1.083

REMARKS.

- 25th.—Fair, with some sunshine in morning, and bright night.
 - 26th.—Fair day, milder, with gleams of sun in morning; gale at night.
 - 27th.—Gale all day; fair early; spots of rain from 11 A.M., and incessant rain from 1 P.M., very heavy at 2.30 P.M.
 - 28th.—Rain till 2 A.M.; clear sunny day; moonlight night with halo.
 - 29th.—Dull almost throughout with frequent rain; gleams of sun between 2 and 4 P.M.
 - 30th.—Almost cloudless throughout.
 - 31st.—Fair early; dull with frequent rain after 10 A.M.
- A mild wet week completing a very mild December.—G. J. SYMONS.



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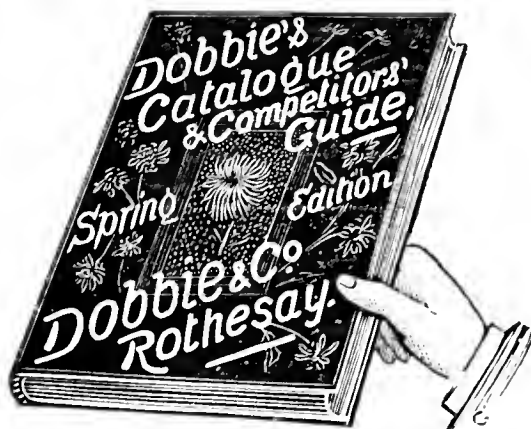
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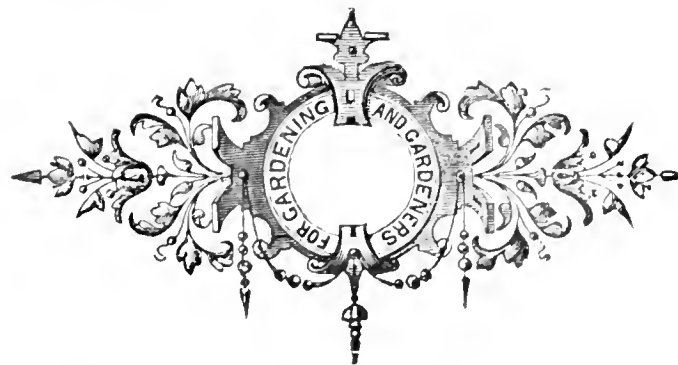
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Journal of Horticulture.

THURSDAY, JANUARY 12, 1899.

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FRUIT OR WOOD.

NOTWITHSTANDING all that has been written on the pruning of fruit trees, it will always be necessary to write more, simply because the young and comparatively inexperienced will constantly be with us to need guidance in this important matter. Then there are, and it is hoped always will be, ardent amateurs who, becoming fascinated with the magnificent fruit they see at exhibitions, determine to become growers of equally fine or even finer samples.

It is not by any means certain that all of them will succeed in that object; indeed, perhaps the only element of certainty about the case is that the majority will not, and the probability is that not a few will find themselves far more expert in growing foliage and wood of robust character rather than blossom and fruit of the best quality; though some, contrariwise, will “rope” their trees with fruit in, so to say, double quick time, while producing little or no wood for extension, and think themselves very clever.

Nothing is easier than to grow far too much fruit and far too little wood on young trees on the one hand, and a forest of wood with a paucity of fruit on the other; and in the absence of knowledge on the theoretical principles on which action should be based, it would almost seem as if about half the people who plant, or are entrusted with the charge of trees, are prone to fall into one of those two extremes; one group not pruning at all, but leaving the trees to “Nature,” the other pruning too much, or at the wrong time, and relying on what they call “art,” and thus make a brave show with the knife.

It is scarcely too much to say that, with very few exceptions, both sections are wrong in their methods for building up trees that combine sound, healthy, thrifty growth with fruitfulness; and hence it is that we are obliged to see so many stunted, prematurely worn-out trees, where they are left to “Nature,” plus blundering in one case, and gross thickets of exuberant growths minus productiveness, where they have fallen victims to artistic pruning, or trimming them into shape, by men who are expert only in the prevention of fruit.

No. 2024. VOL. C., OLD SERIES.

How many thousands of good young trees have been ruined by rough or wrong planting and non-pruning, or "leaving them to Nature," as the planters erroneously think. As a matter of fact their action is in violent antagonism to Nature. When the raisers of thrifty young trees have prepared the land well for their reception, and by proper pruning formed them into shape by laying a good foundation of branches, the trees make admirable growth. They are thus sent from well-managed nurseries in that respect in the best of condition. If they were left undisturbed in the nurseries and had ample room for development it might be wise not to prune some at all beyond removing perhaps a few small superfluous branches entirely, and shortening the unripe tips of those intended to bear fruit. That would be the best plan if the branches were sufficiently numerous to form a good tree; but if too few it would be right to shorten them for producing more, and that is what a good nurseryman would do. In both cases "Nature" would be assisted—in the former instance to stud the healthy unshortened branches with blossom buds; in the latter to incite free, healthy, and, for the first season at least, blossomless growth.

But digging up the young trees, planting them, and then not shortening the long young branches, is quite another matter. This is not aiding Nature in the least, but the exact opposite, because Nature does not dig up the young trees and leave behind the greater proportion of fibrous roots that were necessary to support the rod-like branches. It is impossible, therefore, that the paucity of roots left can in any adequate way support them after the trees are replanted.

For producing free growth the first season the branches must be cut back in proportion to the roots which have been shortened—left behind in the process of digging up. This branch pruning will be to the extent of one-half, but more probably two-thirds, as equivalent to the loss of fibrous roots. The best time for cutting back the branches of newly planted trees, is not when all the buds are dormant, but when those at the extremities are elongating and on the point of unfolding young leaves. The lower buds will then be in a quiescent state; still the sap will be active, and the removal of the upper half or more of the branches will concentrate it on the lower buds, which will quickly start into growth. This was the practice of the old masters, who called it "flushing" the buds for forming a strong base to the wall trees, of which they were so justly proud. The young sparks of the present day think they can grow and train them equally well, but they can do nothing of the kind; they are more expert at spoiling trees, as was very truly pointed out by "A Nurseryman" not many weeks ago.

At present we come to this fact—if you want a free healthy growth of wood, cut well back the branches for producing it; if you want to see the branches of trees studded with bold fruit buds, the less of shortening the better, and then if the branches are thinly disposed, or not less than a foot apart, and preferably more, wood buds will be changed into blossom buds because they cannot help it. It is easy enough to effect such change, but difficult to transform a blossom into a wood bud. Such at least is the experience of—
AN OLD HAND.

IN THE DAWN OF THE YEAR.

WHEN we cross the threshold of a new year, Hope is our welcoming word. We look on the garden, not as it is now; we think of sunnier days, when flowers are no longer scarce; when they laugh in the sunlight, and breathe the summer air. But this word "Hope" is spoken with bated breath. We have had a mild winter; it cannot last like this until summer comes. We know that chill winds and keen frosts will come to check our flowers. Even now, though mild in the garden, the mountain which towers not far away is white with snow. True is it that the charm of the garden now is the promise it gives of the future. Yet it is no less true that even at this drear time we may glean pleasure. "Glean" we say advisedly, for no sheaves of flowers are there, but only stray treasures for the gleaner. It may seem scarcely worthwhile telling of these, yet to some they may give good cheer.

First must come the Snowdrop, called the "earnest of the year." Not yet have come the "Fair Maids of February," which in snowy sheets whiten many a park or lawn, or in the border contrast with the blackness of Mother Earth. They are hastening on, but dally still, for their time is only near, and has not arrived. Welcome will that time be, when, instead of a few of these pearly eardrops, we have them in phalanxes—an Amazonian army of loveliness. Look with me now at those in bloom. *Galanthus octobrensis* comes first. It is not well named; December is its usual month, and although a few flowers look now forlorn, several others are yet fresh and pure. There, too, is *Galanthus Elwesii*. From Grecian soil it has found its way to our northern isle, where it seems happy with us, though not with everyone. A shapely Snowdrop it is, fairly stout and strong. Here, again, is a plant of a selected variety of the Bithynian stock of *Galanthus byzantinus*. It seems, as it is understood to be, a hybrid between *Galanthus Elwesii* and *Galanthus plicatus*. With the flower of the first and the leaves of the second it is an interesting plant. Not all the bulbs of this Snowdrop give flowers so soon, for this variety was selected by our Snowdrop pundit, Mr. James Allen, from among many of later bloom.

The queen of the Snowdrop now is, however, Mr. Edward Whittall's newly found giant variety of *Galanthus Elwesii*. It may not always bloom so early in the season, but when it does it will always be welcome with its broad leaves, tall stems, and large flowers. If, as is said, the maiden of the end of this century is taller and more athletic than was she of its beginning, we may consider this new Snowdrop her representative in the maidenly possession. Another herald is there, too, but one of summer, which has either been asleep until long after the time of trumpet-call or has come untimeously. It is a flower of the large white Peach-leaved Bellflower, *Campanula persicifolia alba grandiflora*. Oh, foolish flower! Pretty it is though it has opened 'mid rain and frosty nights and all the discomforts of the season of the year. Its fate is no mystery to us.

"Fair-handed spring" is yet afar off, but the early Crocus accompanies the Snowdrop, though its deity, the sun, gives it few of his favours. Here is the bright orange yellow *Crocus vitellinus*, brighter than gold in the garden this gloomy day. Its roots and leaves have lured the alchemist to scorn, and have from earth and air with mysterious process drawn the cups of deepest gold. Though the sun smiles not, and they cannot open their bright chalices, these little sires are precious gems to us now.

In more Quaker garb is *Crocus Creweii*, with buff, dark purple lined cones, which grows close by; it wears for the sunlight. Its dress may now be sober and dull, but its inner beauties are great. When the sun shines brighter it will open its white saucers, zoned with gold and contrasted by the black anthers which are its most distinct feature. One or two more Crocuses there are now, and many are on the way to be ready to respond to the wooing of the January sun.

If the Almond is to the Mahomedans typical of hope, what to us lovers of the garden must be that little tree whose petals now begin to show? Long before the Almond it clothes its bare branches with flowers. It is a precious thing indeed which will open when we have just left New Year's Day behind. The tree is *Prunus Davidiana*, a variety of *P. persica*. The first flowers are bursting through. They are worth looking at even now; the white variety with its petals showing above the pale green calyx, and the bright red of the variety *rubra* showing through the brown-green of its protective covering. Heavy rains and clouded skies have kept back some of our early flowers, but the winter Heath, *Erica carnea*, has begun to show colour on its wax-like blooms. Soon it will be bright and ready for the first bee which ventures to wander from its hive.

One could tell of the pale gold of the Winter Aconite peeping through; of some other flowers, such as the Polyanthus or the Wallflower, which give us bits of colour now. One could tell of the greenery around, of Saxifrage, of Ivy, of Cotoneaster, or other plants whose leaves are green. One could tell, too, of the golden stars of the yellow Jasmine. Above all we could tell, did not space fail, of a rare Iris or two past, in bloom, or coming on, or of the many bulbous flowers which, with wondrous power in their delicate unfolded leaves, have pierced the soil in obedience to Nature's laws. The greenhouse may be gay, the garden dull, but its beds, its borders, and rockeries, are full of never-dying interest in the dawn of the year.—S. ARNOTT.



FORCING ROSES.

TO-DAY (January 3rd) I cut a number of really good Roses, and was struck with their beauty and delicate perfume when compared with the majority of flowers available at this season. After all, Roses take the palm at all times, provided the flowers are clean and fresh in colour. I note that a correspondent has been inquiring more than once upon how to force Roses successfully, and especially how to get them sufficiently matured to start into growth at the present date. I must confess to surprise that anyone should experience difficulty in getting plants ripened by the early part of the year. Even our plants in the open, their roots in wet soil, and the season very mild, are well matured, and have been for this two months past, so that I am sure there is something very wrong in the treatment if your correspondent fails to ripen them in pots, where he has the decided advantages of water control, and the fact that pot Roses have made the bulk of their growth before those in the open are barely on the move.

If one wishes for Roses at Christmas and January, they must select the right varieties. It is almost useless to try those with very double blossoms, although, in those cut to-day and previously, there were Jean Ducher, Maman Cochet, Catherine Mermet, and Bridesmaid; but in this case the plants have been well matured, and forced for several years in succession. Of course, as they are in full bloom now, they will naturally have made their second crop quite early in the season; for Teas in pots should be allowed to flower a second time the same season, in accordance with their natural habit outdoors. Most of the Hybrid Perpetuals, on the other hand, are better removed to another house, and the space occupied by a second set of plants. It seldom pays to keep the Hybrid Perpetuals for a second crop under glass during the same season.

The plants that are now in flower were housed early in November. They would have been under cover three weeks earlier had not the weather been so mild. After they had flowered the second time last season they were removed to a sheltered place outside. This was some time in May or June. By not overwatering, the wood left below where a flower was cut, and also that producing no bloom, got much harder and ripier than would have been the case if not fully exposed. It is true that most of the plants were active still, producing several small flowers and young growths from the point; but I would not have it otherwise, even if it were possible. We never see a Tea-scented Rose at complete rest, unless very severe weather has been experienced. Then why expect it during summer? The plants stood in this position until early in September, when they were turned out of the pots, as much of the old compost rubbed off as could be without seriously disturbing the roots, and repotted into a good and rich loamy compost.

It seems a rooted idea that no pot Rose must have its roots disturbed under any consideration, or the growths will go blind. This is wrong, and no doubt arose from the fact that if we are to get the best results from our most vigorous growers the season following their roots should not be disturbed. But the two cases were not quite similar. With our medium growers we prune back to ripe eyes, and cut away a considerable amount of the wood. In the other case we cannot prune without sacrificing the best flowering wood, and consequently if the roots are to develop the whole of the eyes upon long rods of growth, they must be more established than is necessary with weaker growers. Climbers in pots are generally repotted at the same time as the others, but they need quite different treatment during summer, and are simply repotted without removing much of the old compost. These will be alluded to again in due course.

When the medium growers are repotted they are stood on a fairly sheltered border, and frequently syringed if the weather is dry. This prevents wood shrivelling from the slight root disturbance. Three weeks or so afterwards the plants are pruned, but remain in the same position as long as the weather is mild. The fact of their being fairly ripe, the slight root disturbance, and their contact with fresh soil, induces new roots to form rapidly. All of us have noticed how very soon a Rose puts out new roots when laid into fresh soil. This is so, even in the dead of winter. How much more so during the genial days of autumn? It is self-evident that with only ripened eyes left on the plant, and the roots pushing into vigorous growth, the eyes must move as well. And they do. It is our place to see that this spurt of activity does not receive an injurious check. This is where so many fail. Remove the plants to cover as soon as frost appears, or even cold weather. As already remarked, the last autumn did not necessitate this until much later than usual, nor was there need of artificial heat for some little time after housing.

Early in December the plants had healthy young growths from 2 to 4 inches long, and were then hurried by a little fire heat; in fact, we endeavour from the first to bring them on as naturally as possible; and we never find full summer weather while the plants in the open are quite or nearly dormant. Yet so many introduce a ripe plant into an almost stove temperature before the sap has become active. A little thought would surely prevent this. I need not say that only the ripest and most promising plants are chosen for winter forcing, the others are saved to come on as a second and third supply.

Now to come a little closer to the point that I gather your correspondent finds some little difficulty in. After the later plants have flowered and been placed in the open they are treated the same as the first, except that they are not potted quite so early, and are housed in pits instead of remaining in the open again for a time. The pits are merely used to keep off excessive rains and the chilly weather; otherwise the treatment is similar, the Roses being taken to a temperature of 40° or 45° early in the year. This, together with the remarkable influence the sun has upon all plant life after the days have turned, causes healthy and strong breaks of new growths. I believe in working Roses in pots on much the same principle as we adopt with Tulips, Hyacinths, and other bulbs. We get some root action first here, and do not put the bulb into a greenhouse heat at once. Do we not find a steady root advance in the open before our Roses break into growth, and before early summer weather is experienced?

The general routine of culture under glass I will not dwell upon now; it has been given so often. But I do feel certain that most failures to force Roses early can be put down to the few errors of judgment I have endeavoured to point out.

The difference when growing climbers in pots lies in cutting them down as soon as the crop is over. Maréchal Niel and others seldom give us a second crop the same season, and it is well to secure more long rods of maiden growth for the next season. This is why the plants are kept under glass and fed freely until such rods are obtained, after which they are removed to the open to ripen and mature, ready for early forcing once more. If your correspondent has any further difficulty, and will give a description of it, as well as his treatment of the plants, I will gladly help him to the best of my ability, and when I say that fully twenty years ago I was fortunate enough to secure one of the R.H.S. medals at South Kensington for cut Roses grown in the winter, and have been more or less among pot Roses ever since, he will, perhaps, believe I have a right to the *nom de plume* of—PRACTICE.

SOIL ANALYSES.

YOUR Forest Hill correspondent, "H. H. R.," refers in the issue of December 29th last (page 500) to some observations of my own on the above subject in a previous issue. I had satisfied myself by experience that it was easier to lose money than make it by extensive series of soil analyses, and to found thereon a system of special manuring for various kinds of crops. After applying, on scientific advice, what were considered appropriate food materials for certain kinds of vegetables, fruits, and flowers, and finding that no small amount of time, with some money and reputation, was being wasted in the process, an escape was made from the fanciful routine.

Most of us are, I suspect, prone to indulge in imaginings even if they be vain, as mine has proved in respect to "H. H. R." I could not bring myself to think of him as a professional gardener, though I had an idea he might be something more—a philosopher learned in the sciences. I am surprised to learn on his own authority on page 500 that he is "no chemist." That being so, I am driven to the conclusion that he neither derives inspiration from practice in the garden nor from original scientific research.

Such men are often ardent lovers of gardening, and sincerely desirous of being helpful in it; and are, in my experience, just the men to think that wonders may be wrought as the result of acting in accordance with the revelations of soil analyses. I have not the smallest hesitation in saying that is a mistake. The greatest successes in cultivation have been attained without anything of the kind. If the soil must be analysed, to find what it does and does not contain, so must the plants and crops intended to be grown in it, or we should be "no forrader" in our dream of so-called scientific manuring; and then as the constituents differ in the same kinds of plants as grown in soils of diverse nature, where are we? Not in a flood of light, but rather in somewhat of a fog.

I have been fogged many times by scientific elucidations (?) and, rightly or wrongly, have arrived at this conclusion—namely, if a man cannot make the best of a garden in producing what is required to be grown in it without all the diving into the mysteries which men with a scientific turn of mind desire, that such man is not endowed with the instincts of a gardener. I have been what I once thought guided, but now call bothered, by numbers of analyses, and found them of no practical use, but, on the contrary, more or less bewildering.

In consequence of "H. H. R." quoting Cousins' "Chemistry of the Garden" as an authority on the subject in question, I obtained the little book. I expected to find in it analyses of various soils and plants, also advice given for adapting one to the other by the application of exact ingredients. I am astonished, after the references of your correspondent, to find nothing of the kind, and think I have discovered that Mr. Cousins has a more practical mind than his admirer seems to possess. What does the author say? Under the heading of "Plant Ash Fallacies" he says boldly: "Certain well intentioned persons have analysed the ash of some cultivated plant, or perhaps have consulted the monumental work of Professor Wolff, which gives the composition of the ash of hundreds of plants, and have then deduced from the figures set forth the ideal manure for the plant in question. This is a method based on the most egregious fallacies." What has your Forest Hill writer to say to that? or to this?—"To put it plainly, the plant ash is at the best but a general indication of the needs of a plant, and those who employ it for the practical instruction of the worker are indeed blind leaders of the blind." That is plain enough in all conscience, and I am not without evidence for sustaining me in the belief that it is correct.

I cannot resist saying that "H. H. R." appears an adept in taking ideas from books that he thinks favour his views, while ignoring statements in direct conflict with his theories. Only on one point does he make a practical suggestion, and this is the spending of 10s. on a "simple analysis" for testing the soil for lime, and adds that "the demonstration of this to the extent of half per cent. in the soil would justify the cost of a dozen analyses," or £6. Would it? Only if the fact could not be determined otherwise; but Mr. Cousins would settle the point with about two pennyworth of muriatic acid.

There we have the difference between a real scientist and a writer with the best intentions but "no chemist." If he had been gardener to a gentleman who had really very considerable knowledge of chemistry, and means for feeding plants and fruits scientifically, and had to feed them "to order" till ashamed of a brother blue apron coming into the garden, his faith would be somewhat shaken in the doctrine of simple analysis of the soil for making ignorant gardeners wise.—AN ENGLISH GARDENER.

[Yes; but not an ignorant one as judged by practical results over a long series of years.]

In these days of advancement in all the arts, it is no wonder that some of us gardeners are trying to keep up with the times. Lecturers are being scattered all over the kingdom, and when once they can induce us to take up the study of the property and composition of plants, soils, and manures, we in our rush for knowledge grasp at every straw that floats by us, feeling sure that if we can get hold of it, it will carry us to that mysterious land where we shall find what we seek. It is astonishing as we wander through text book after text book on agricultural chemistry, how rapidly our faith can change.

After passing through that desert of dryness which we find standing prominently before all the sciences, we find ourselves in a new world, a world stretched out before us containing a certain fascination, for in it we are able to learn some of the secrets of Nature, and are happy beings. As we wander on we learn how all vegetable life is built up out of soil, air, and water—all such simple substances when you understand them; and like the writers of the text books you feel you only want an analysis of your soil and plants, and some chemicals, and then you could grow plants wonderful to behold. Vain hopes of men are these. The analyses and the mixtures of chemical manures do not prove satisfactory to the test; and strangely our friend Jones grows finer fruit, flowers, and vegetables than we, and he—ignorant man—will have nothing to do with our mysterious world.

But onward we go, more reading of more text books, new ideas are being evolved in our minds, and alas! our first love is now slighted, for we find we have other things to consider connected with soils besides analyses, if we wish to grow good things. We are sorry for this, for we well remember in our early days what stress such and such a professor of the soil mysteries laid upon the analysis as being the very foundation of successful culture. His words fell deep, and now in our older days and up-to-dateness they have to be uprooted, for soil chemists now tell us it is not an analysis of the soil that we require, but an analysis of that portion which may be washed out of it with water and weak acids.

I have had my fill of soil analyses and the making of mixtures for plants, and now attach very little importance to the former, but then I am only one among the many, and my voice is lost amidst the multitude of believers. May they have good crops and a prosperous new year is the wish of—A WANDERER.

[We are bound to say that this "Wanderer" in search of knowledge has had much more than ordinary laboratory and actual cultural experience, and has found out how to succeed in growing produce for the million to a remarkable extent. We shall be glad if he has time to write again.]



CATTLEYA BOWRINGIANA LADY WIGAN.

THOUGH introduced from British Honduras by Messrs. J. Veitch and Sons so recently as 1884, the typical form of *Cattleya Bowringiana* is comparatively well known, and is highly appreciated for its many good qualities. In the "Orchid Growers' Manual," Messrs. B. S. Williams & Son say:—"It is closely allied to *C. Skinneri*, but we have found it a much freer grower and flowerer than that species. It is stated to have been found on cliffs by the side of streams near to waterfalls. In consequence, in its native habitat it receives a large amount of moisture. In cultivation it has been found necessary to give this plant an abundant supply of moisture, together with a free circulation of air." The flowers are rich rosy purple in colour. It is in colour alone that the variety *Lady Wigan* (fig. 5) differs from the type. The sepals and petals are lilac with a rose suffusion; the lip is reddish lilac on the front lobe, velvety crimson in the centre, with a pale primrose throat. When shown at the Drill Hall on November 8th by Mr. W. H. Young, Orchid grower to Sir F. Wigan, Bart., East Sheen, an award of merit was recommended by the Orchid Committee.

CYPRIPEDIUMS AND THEIR CULTURE.

RANKING as they do amongst the most popular plants in the Orchid family, *Cypripediums* deserve, and from many persons receive, the closest and most skilful attention. For the comparatively small grower they are particularly valuable, as with a judiciously chosen selection it is quite possible to have a few plants always in flower, and these last a remarkably long period, either on the plants or cut for placing in vases and other suitable receptacles. Take, for example, the well-known *Cypripedium insigne*, and think of its value during the months of winter, when choice flowers are almost invariably scarce. In it we have a plant that will, year after year, produce in November and December scores of flowers, provided reasonable attention be accorded to it. For the greenhouse, the conservatory, or the room it is alike valuable, and such are the variations in colour that it never fails to receive admiration from all beholders. But it is not proposed in these notes to deal with *C. insigne* alone, but to give a general survey of the genus, in the hope that the remarks may be helpful alike to the owner of a large collection as to the cultivator of only two or three dozen specimens of one or more kinds or varieties.

To grow a varied collection of *Cypripediums* two houses are necessary, one that can be maintained at a stove temperature, and the other at a cool intermediate heat, and it is immaterial in what form the structures are built, so long as the heating and ventilation arrangements are perfectly efficient. Then, too, they must be drip-proof, with top and bottom ventilation, the air from below being admitted direct to the pipes so that it becomes warmed before it reaches the plants, for no side lights must be opened to admit cold draughts. It is said that heat is life, and to some kinds it may be so, but to others it is quite the reverse. The stove should be so equipped that 60° can be maintained in cold weather, though when the temperature outside is excessively cold a fall of 2° or 3° will do no harm. In the summer a temperature of 70° at night will not be prejudicial if abundance of atmospheric moisture is provided, but a hot dry atmosphere must be avoided. The other structure should be so arranged that 55° in the winter can be commanded, with a rise of 5° or 6° in the summer months, and here again an arid atmosphere must not be tolerated.

To simplify matters in dealing with compost, the family may be divided into three sections:—1, the niveum section; 2, the tessellated leaved section, which is well illustrated in *C. Lawrenceanum*; and, 3, the green leaved section, and the latter as being the largest may be dealt with first. Many of them will grow in almost any kind of soil, but I have yet to learn that there is economy in using a poor soil at the outset. It is therefore our practice to employ two parts of peat, broken into good sized lumps, taking out as much fine as possible; one part of sphagnum moss picked clean, and one part of best yellow loam, taking out the fine in the same way as with the peat. These ingredients thoroughly incorporated are used as rough as possible, and the potting is not done too firmly. A slight elevation above the rim of the pot is all that is desirable. For the tessellated leaved section I invariably use equal parts of peat and sphagnum moss. In dealing with the niveum section we come to the one that is the most generally unsatisfactory. A mixture of two parts of peat and two parts of loam, prepared in the same way as the others, with a sprinkling of coarse

Bedfordshire sand, and say, one-sixth part of limestone seraps, has been found most satisfactory. For all sections pans and crocks must be scrupulously clean, and one of the most important points in the culture of these plants is an abundant supply of water when they are growing strongly, and are in vigorous health, and it is therefore necessary to afford as nearly as possible perfect drainage. The material

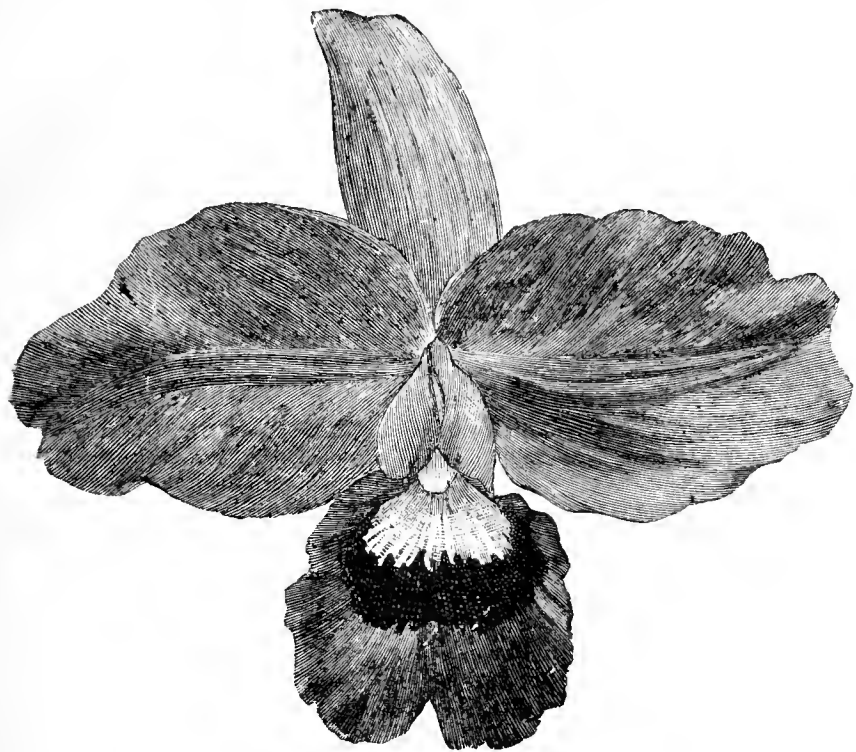


FIG. 5.—CATTLEYA BOWRINGIANA LADY WIGAN.

used must be so placed that water applied will pass rapidly away, and should from half-way to two-thirds fill the pots. The amount will vary according as the plant is a strong or a feeble rooted one.

Unlike many Orchids *Cypripediums* have no pseudo-bulbs in which to store food, and consequently cannot withstand drought. There must be no lack of water, though on the other hand the compost should never reach saturation. Naturally the amount of water will largely depend on the compost in which the plants are growing; the heavier this is the less water the plant will require, and the reverse. Personally I am firmly of the opinion that the great secret of plant cultivation lies in the proper administration of water, or in other words having a thorough grasp of when to apply and when to withhold. As a matter of fact there is as much difference in the highly finished touches of one of our finest artists and in the veriest daub one ever saw, as in the result achieved by the man who waters his plants properly, and one whose application lacks common sense and judgment. It is the power to concentrate the mind on apparently small things that leads to success in the greater, and for this reason I wish to forcibly impress the importance of careful waterings as well with *Cypripediums* as with any other plant in cultivation.

As these plants are essentially shade loving, if the sun shone directly upon them for any length of time the leaves would soon be disfigured by scorching. Means must therefore be taken to provide shade. For this purpose a raised blind or blinds of laths is the most satisfactory, as while breaking the direct rays of the sun, it admits a certain amount of light, and also allows air to pass freely between the blind and the roof of the house. The necessity of the closest observation of the individual requirements of each plant cannot be too strongly impressed on the cultivator, as experience teaches that some which would fail hopelessly in strong light would luxuriate in a shady corner. For example, neither *C. superbiens* nor *C. Sehlinii* will tolerate strong light. Equally as important as the points that have been adverted to is the ventilation, to which the closest attention should be paid. The necessity of avoiding draughts has already been briefly referred to, but the other extreme of not admitting fresh air at all is equally disastrous to plant life.

It should always be borne in mind that plants are living things that must be rationally treated. In admitting air do not use the top ventilators more than is necessary, as these allow the moisture to escape. A little air may be constantly admitted through the ventilators in the wall beneath, as previously recommended, but these should be open half inch only in cold and windy weather. As perfectly developed leaves are the main source of strength in these plants every possible means should be taken to preserve them in health. Broadly speaking, they are the lungs of the plant, and as such must be kept free from impurities. It is obvious that when the pores are full of dust they cannot perform their proper functions, and the plant suffers

immediately. Cleanliness is one of the greatest aids to successful plant culture, as it encourages the leaves to do their work, and it is certain that periodical sponging with a very weak solution of some approved insecticide is more than repaid by the increased vigour and health of the plants being dealt with. Many cultivators have doubtless been, as I have, called upon to take in hand a collection of dirty plants, and they will know the worry and disappointment that are incumbent upon such a task. Energy and perseverance are, however, all-powerful, and in skilful hands the recuperative powers of neglected plants are nothing short of remarkable.

Whilst healthy *Cypripediums* have few enemies, the name of the pests that attack weak plants is legion. No doubt everyone has observed how an unhealthy plant, like an unhealthy person, seems to be heir to all sorts of ailments, and the weaker the plant the more disastrous will be the effects of the attack. The pest most to be dreaded is black thrips, as the foliage is so soon disfigured; but if the atmospheric moisture and damping of the surfaces are properly attended to it will not cause much trouble, and should it show itself, one or two operations with the XL vaporiser will usually prove effectual in destroying it. Scale of various sorts will sometimes be found on the plants, but if the sponging is done as suggested, there need be little fear of serious damage. Woodlice, snails, and slugs are fond of young roots, and sometimes flowers, and are most readily trapped in Potatoes, the centres of which have been hollowed out. Cockroaches and crickets have eaten the edges of the leaves, and also the flowers, and must be eradicated by one of the several advertised remedies. Syringing ought not to be practised, as the water often gets in the young growths, and causes them to decay.

To name all kinds and varieties would be an impossibility, but I will enumerate a few, and suggest in which house they are likely to do best. For the stove take the *niveum* section in its entirety—viz., *niveum*, *bellatulum* and its variety *album*, *Godefroyæ* and its variety *leucochilum* (fig. 6), *concolor*, and most hybrids in which either of these species is a parent. In addition to these there are *Chamberlainianum*, *ciliolare*, *Curtisi*, *Haynaldianum*, *Hookeræ*, *lævigatum*, *longifolium*, *Lowi*, *Mastersianum*, *Rothschildianum*, *Sanderianum*, *Stonei*, and many of the *Selenipediums*, and also hybrids in which any of these species

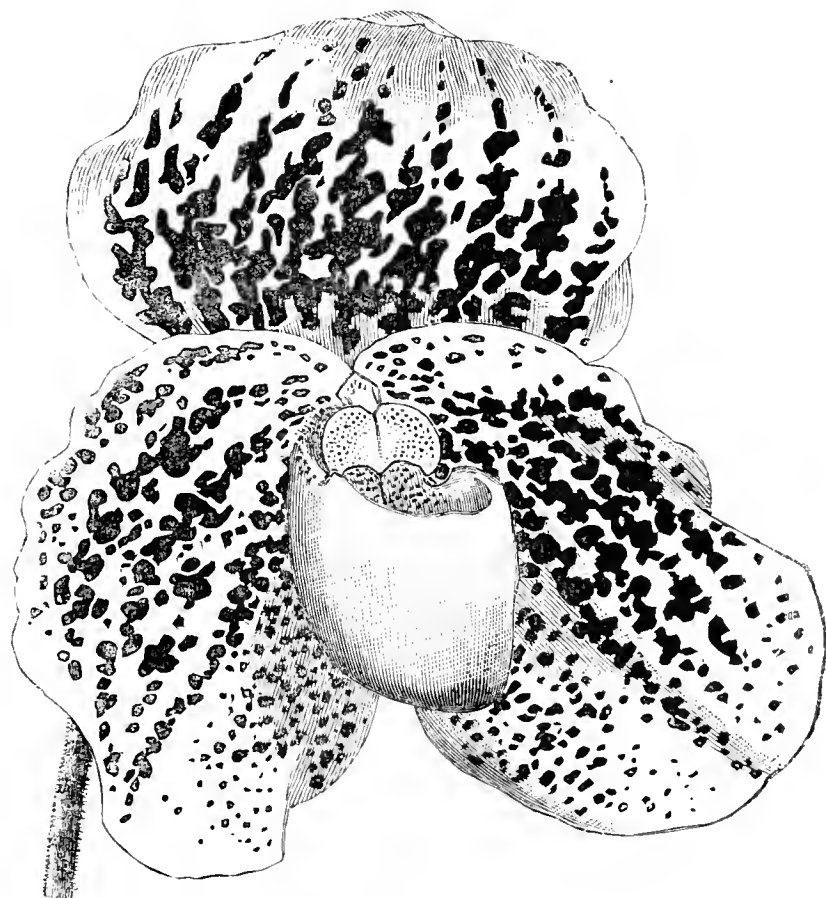


FIG. 6.—CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.

are parents. The majority of those named will exist in the intermediate house, but as time is money, and many of them will grow much faster in the warmer structure, the cultivator must use his discretion, and place the plants accordingly.

Strides made in the collection of no class of plants have been so rapid as with *Cypripediums*, and I recommend to all plant lovers about to commence the cultivation of Orchids to try a few of them, as the plants are of the easiest cultivation, and last in bloom over a very long period; while to those who like subdued and refined colours nothing could possibly be more pleasing.—J. BARKER, *Hessle*.

CYPRIPEDIUM INSIGNE.

WHAT a useful plant this is for supplying cut flowers at this season of the year, and it is because we have realised its great value I am prompted to send a few facts that may prove interesting to my fellow readers. From one plant in a 12-inch pot we have taken fifty-two flowers, and from six plants in 9-inch pots the number of flowers have been twenty-five, thirty-six, forty, thirty-two, thirty-six, and thirty-six respectively, or a total of 257 from the seven pots. We also have three plants in 48-pots carrying eighteen flowers in the aggregate, and I venture to think these results very satisfactory.

It is now four years since the large plants were placed in the pots they now occupy, in a compost of turfy loam and peat, chopped sphagnum, coarse sand, pieces of broken soft brick, and charcoal. Last season we had seven twin flowers, the previous year eighteen twin flowers, but this season not one twin spike has been produced. This would lead one to think that a free root run is more conducive to the production of twin flowers than well-nourished plants in a root-bound condition. I am under the impression that I do not apply water so freely as some do, and as a consequence the plant food is more concentrated, hence their floriferousness. Our plants from October to May are given an intermediate temperature, while the other portion of the year they spend in a Peach house (not forced) or a span-roofed cold frame thinly shaded.—THOS. CROSSWELL, *Homewood, Beckenham*.

[The photograph sent with the above notes represents an admirably grown plant of an excellent variety, but it cannot be reproduced satisfactorily.]

THE CRYSTAL PALACE FRUIT SHOW.

"DON'T you think something should be done to help to arouse more public interest in this annual show?" said a friend to me the other day. Well, I am entirely of that opinion, and have for some time thought that, in spite of all that has been attempted and done, public interest in fruit culture is in this country at a low ebb. When I think of what public attention is bestowed on sport, and how little is given to such matters as fruit culture, I think of those lines which Shakespeare put into the mouth of the fallen cardinal, "Had I but served my God as diligently as I have served my king He would not have left me in my grey hairs to perish."

It will be a sad time for Great Britain if in years to come her people should have to paraphrase that bitter lament, and find cause for regret that more attention had not been given to practical good than to childish play. It is a long time yet to the next show, which will be held at the close of September next. Yet time flieth fast, and any arrangements needful for getting more of publicity and notoriety attached to the show need to be made in good time.

Some years ago, in the palmy days of the international Potato exhibitions, it was not difficult to secure the attendance of the Lord Mayor of London and the Sheriffs in state, with a big following. There seems attached to visitations of public men or prominent officials to shows a degree of publicity not commonly found when no such visits are arranged. To the general public a fruit show at the Crystal Palace is but an ordinary occurrence, few realising that it is the product of a great home industry, that it represents food of the most valuable and healthful description, and that it is also an industry which it is at once desirable greatly to improve and widely extend.

I do not assume that the Lord Mayor or the City Sheriffs are the only or the most fitting persons to invite to grace the opening of the show. We have noblemen and gentlemen, occupying distinguished positions, whose lives and acts are practically public property, who have the interests of fruit culture at heart, and who would certainly secure at a show of this nature a great following. The primary object of the exhibition, and of all associated with it, would be less the mere awarding of money prizes or of winning them, but rather creating a fine demonstration of British fruit, with the view to secure for it wider culture and a greatly extended demand.

The dropping out of the conference last year seemed to be a mistake, and it is hoped one, not necessarily for each day, will be arranged. But the Palace authorities should be invited to place a convenient room at the disposal of the R.H.S. for the purpose. Something better and less noisy than was the barn in which one or two previous conferences were held, and the subjects chosen for papers should be severely restricted to one per day. Papers as a rule are far too long. The readers have been given much rope, and in a spirit of kindness, in which, of course, there is no egotism, they proceed to use it by strangling the conference. Papers should not exceed twenty minutes' duration, allowing ample time for their discussion, and chairmen should be severe in keeping speakers closely to the subject in hand.

If subjects are wanted we can find them in "How best to promote the culture of Apples and Pears for market purposes;" "How best to place fruit into commerce to meet public requirements;" and "How best to develop the existing demand for fruit and its consumption." Thus in these three subjects we deal with the

primary hardy autumn fruits for culture, marketing, and expansion. Papers on these subjects should be sought for a little outside the general reach of readers. Surely there are others willing to furnish them beside the few who constitute generally the R.H.S. stock in trade of readers of papers.

Turning to the show itself, it will be well worth the consideration of the Council whether more effect cannot be obtained from a closer arrangement of the tables. Not only effect but interest is much lost when a show is so widely distributed. Still farther, it is so difficult to follow the run of the classes, of which there seem to be too many, especially of the single dish ones, of which at least a score might be lopped off with advantage. It is folly to offer prizes for varieties that are seldom represented by but two or three dishes. Even of very popular Apples it does not follow that classes should be made for them every year, if there be other good varieties generally grown that get left out in the cold.

In arranging the single dish classes, whilst good reputed popular varieties, that have well stood the test of time, should be kept well before the public, yet some others as good, perhaps better, should be occasionally noticed and encouraged also. Specially must care be taken to keep the schedule from being a trading compilation. The object of the show is less to develop novelties, which growers are at liberty to do to their utmost in their own collections, than to show to the public, and especially to the consuming public, what fine varieties we have in cultivation, and how superbly they can be produced. Very much might be done to make the show more attractive by introducing small plants freely about the tables, and by dividing sections or classes with small groups of cut flowers. But whatever is done should be done with a will, with full resolve to "boom" the show and fruit culture, and compel interest and patronage from the public at large.—A. DEAN.

AMERICAN BLIGHT AND NURSERYMEN.

MANY gardeners know what a troublesome pest American blight is when it gets an extensive footing on Apple trees, especially on those of considerable size and age. A very common way by which this pest is introduced into gardens and orchards is with consignments of young trees from nurseries. I have scarcely, if ever, received a number of trees from a nursery without some of them being affected with more or less of blight. If only one in a consignment be infested it is more than likely that the foe will spread over the remaining trees. In the autumn of 1897 I had an experience of this sort.

My present object is to refer to how I have got rid of the pest, and to make a suggestion to nurserymen that I think would be a safeguard to themselves, but especially to their clients. I first washed the roots of the trees with clean water to free them from all soil and any insects that might be burrowing. The trees were then thoroughly moistened through a syringe with a mixture of three wineglassfuls of petroleum to a gallon of soapy water, and in two or three minutes syringed with clean warm water. The insect vanished instantly under the petroleum bath, and I have never seen anything of it since.

My suggestion to nurserymen is, I think, one that is quite practicable. It would increase their reputations, save gardeners some trouble, and, I think, be a means of staying the spread of blight if, when trees were being lifted in the nurseries, a piece of isolated ground were set apart on which any affected trees could be "heeled in" till it were convenient to deal with them, instead of sending them away in the heart of a package of clean ones. I conceive that it might be inconvenient to deal with them, as I have described, in the bustle of the despatching season, but they could be dealt with when it was over. I feel certain that what I have recommended as an application is a complete remedy, and the tax on the nurseryman would not be great.

I was very much interested on visiting a garden a few weeks since, and inspecting a number of espalier Apple trees, most of which were almost covered with blight. They are trees, I should say, fifteen or more years old. There were a few varieties amongst them that were all but entirely free from the insect; yet in several cases the branches of the foul ones and clean ones were running side by side—in fact, fastened with the same ties. On asking the gardener if the clean ones always remained clean, his answer was that they did.—DAVID THOMSON.

[A case is recorded in the *Journal of Horticulture* of a nurseryman, on discovering some American blight (which was introduced by certain varieties of Apples) in his collection, employing a boy whose first morning's work throughout the spring and summer was to search for the blight and with a brush apply a strong yet safe solution of Gishurst compound. In this way the pest was extirpated. We believe our chief nurserymen are most careful not to propagate this great enemy of Apples. We have recently seen a number of young Apple trees uprooted and burned because of the infestation. The trees were a "cheap lot," obtained from a local market. Mr. Thomson's effective winter mixture would not be safe to apply to trees in summer.]



WEATHER IN LONDON.—From Wednesday until Saturday of last week the weather, though dull and cold at times, was open and, for the first week in January, very mild. On Saturday there were heavy showers, but Sunday and Monday were characterised by brilliant sunshine, the latter day being quite warm. Tuesday was showery in the morning, with hail and a drenching rain towards ten o'clock at night. Wednesday was bright, with showers at midday.

WEATHER IN THE NORTH.—The closing days of the year were marked by 6° of frost on the 30th, and 8° on the 31st, followed immediately by thaw. There were again on the 7th inst. 8° frost, and 6° on the following night, rapidly giving way to rain. With these exceptions the record of the past two weeks has been continuous gloom, fog, and wet. Tuesday morning was dull, with thermometer at 42°.—B. D., *S. Perthshire*.

GARDENING APPOINTMENT.—Mr. Thos. Harris, for two years with Messrs. J. Laing & Sons, previously seven years gardener at Ashby St. Ledgers, Rugby, has been appointed head gardener to A. H. Harman, Esq., Lower Greyswood, Haslemere, Surrey.

PETERSHAM COMMON.—The Board of Agriculture, in response to a memorial, has drawn up a scheme in respect of Petersham Common. This provides that the common shall be regulated and managed by the Corporation of Richmond, who are empowered to execute drainage and other improvements, to plant trees and shrubs, and render the ground more pleasant for recreation and exercise, but are inhibited from doing anything that shall otherwise alter its natural features or interfere with free access to every part. The Richmond Town Council are also deputed to frame bye-laws for the regulation of games and of assemblages of persons thereon.

DRILL HALL DISPLAYS.—When in past seasons one has read in our Journal that the various firms who make a speciality of growing the Primula, Cyclamen, Cineraria, and other florists' flowers have had such grand displays at the R.H.S. Drill Hall meetings, a feeling of regret at not being able to see them is often expressed. I think if the large firms who cultivate these flowers so well were to advertise when their specialities were likely to be seen at the Drill Hall it would give those interested the opportunity of seeing them. I am aware that such intimations have been given, but very rarely. Of course we are cordially invited to "come and see" the flowers at home, but when the naturally desired "order" cannot easily be left behind one feels a little reluctance in spite of the invitation.—A BECKENHAMITE.

THE SECRETARYSHIP OF THE ROYAL GARDENERS' ORPHAN FUND.—Rumour, as might be expected, is busy, ubiquitous and perhaps exaggerated, in regard to the vacancy which is created by Mr. Barron's retirement. It is to the effect that there are hundreds of applications from all sorts and conditions of men, not to say lady gardeners. The army, navy, church, law, press, as well as the gardening fraternity, are all said to be represented. If all is true that is heard on the matter, the special Committee appointed to consider the applications have no light task before them. For ourselves we hope that, as the inception of the Fund must be credited to gardeners, someone intimately connected with gardening will be found to possess the requisite qualifications for the position. On one point at least there will be unanimity—namely, that the health of Mr. Barron will be greatly improved and eventually completely restored by the rest from duty that he deserves so well.

— Is the post soon to be vacated by Mr. Barron to be filled by the Committee, or at the next annual meeting? This question arises out of the somewhat vague wording of the advertisement for a Secretary. Another and pertinent question is the following:—Is the personal canvassing of individual members of the Committee by prospective secretaries quite in order or politic in a charitable institution above all others? It is an open secret that this has been freely done. Those who have thus acted are perhaps oblivious of the fact that in many similar advertisements canvassing the Executive is held to be a direct disqualification. Why not so in the case now under consideration? If the election is made at the annual meeting, it is hoped that it will be by ballot.
—ANNUAL SUBSCRIBER.

FROZEN SEEDS.—Experiments with plant seeds subjected to extreme cold have shown that the power of germination is not destroyed, but merely suspended by the cold. By the use of liquid air, seeds of Barley, Oats, Squash, Cucumber, Peas, Sunflower, and some other plants, were recently kept for 110 hours at a cold of 183° to 192° Centigrade. They were then carefully and slowly thawed for fifty hours. After sowing (says an American contemporary) they germinated as well as if they had not been frozen.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We remind our readers that the sixtieth annual general meeting and election of pensioners of this Institution will take place at Simpson's, 101, Strand, London, on Thursday, January 19th, at 3 P.M., and that the usual annual friendly supper will be held at the same place and on the same date, at 6 P.M., when the chair will be taken by Mr. George Monro of Covent Garden, member of the Committee of Management. Those friends who desire to be present on the occasion should intimate their intention to the Secretary on or before Monday next the 16th inst., at the offices, 175, Victoria Street, London, S.W.

ROYAL METEOROLOGICAL SOCIETY.—The annual general meeting of the Society will be held, by kind permission of the Council, at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 18th inst., at 7.45 P.M., when the report of the Council will be read, the election of officers and Council for the ensuing year will take place, and the President (Mr. F. Campbell Bayard, LL.M.) will deliver an address on "The Government Meteorological Organisations in Various Parts of the World," which will be illustrated by Lantern Slides. The above meeting will be preceded by an ordinary meeting, which will commence at 7.30 P.M.

ALOES.—It is fortunate that so many members of the above S. African family open their flowers in the winter, the large spikes of gorgeous blooms making a striking feature when most things are at rest. In the succulent house at Kew a number of plants are now at their best, and quite a nice show is made. Among the most noticeable are *A. fruticosa*, with scapes 2½ feet long, bearing dense heads of orange red flowers, 8 inches long. Several plants of *A. pluridens*, with branched racemes, the flowers varying on different plants from yellow to red. The sturdy glaucous, purplish leaved *A. purpurascens*, with a strong spike of red green-tipped flowers. *A. brachystachys*, with long, slender spikes, and *A. frutescens*. The latter is represented by a particularly fine specimen. It is one of the smaller leaved section, and branches freely to form a large bush; on this a large number of flower heads are produced on scapes 2 to 2½ feet long. Besides these a number of plants are flowering in the Mexican house; these are planted at the base of pillars, and are seen to the best possible advantage. *A. arborescens* and *platylepis* are a fine sight; several large, many-branched racemes of bright red flowers are now at their best, the flowers being shown off finely against the light colour of the building. A glance at the strength of these flower heads is enough to show the advantage of the planting out system.—D. K.

SPADE LABOUR.—In the extract from Mr. W. Roupell's paper on "Suburban Fruit Growing," published in your last issue, there is special reference to the need of training youths in the use of the spade in gardens. No doubt the use of the spade or fork, wherewith to trench, ridge, or dig, is not popular with those young men who regard all work outside of houses as menial and vulgar; but a pretty sort of head gardener will be ultimately made who has not when young learned to use the spade. When I read this little reflection of Mr. Roupell's, my mind was naturally carried to the work being so largely done in Surrey in connection with boys' continuation school gardens, under the County Council, where hundreds of youths are annually being taught, not only how to best handle or use spade and fork, but also to utilise them in the cropping of small areas of ground profitably. Lads so instructed prove to be very valuable helpers when they drift off into private, market, or other gardens somewhere, as many of them do. No one more than Mr. Roupell would be gladdened to see these lads at the work on summer evenings. We want an army of diggers and forkers in this country, because it is only through such agency that soil can be made fully capable of giving forth of its productions. I have regretted to learn that in some places, because lads are not regarded as eligible for this training until they have left school, the Educational Department somewhat harshly interposing, that some groups of gardens have to be closed, as boys seem so much sought for they are found employment the moment they leave school, and school horticulture is of little value. No better authority for the promotion of gardening amongst the young exists than the County Council.—D.

— *HELIOPHILA SCANDENS*.—A plant of this S. African Crucifer is now in flower in the succulent house at Kew. It is a climbing plant with small, dark green leaves, and produces loose racemes of white, Wallflower-like blossoms in great abundance during November, December and January. It is an easily managed plant, and might be used more extensively than at present, both as a climbing plant for the roof, or a pot plant for the cool greenhouse. It will root from cuttings, and almost any ordinary potting soil is suitable for it. Plants which flower so freely as this, at a time of year when greenhouse flowers are scarce, are worthy of prominent places.—KEWITE.

— **FRUIT EVAPORATION**.—There is a big outlet in the fruit business awaiting development in India in connection with the evaporation process. Not fruit drying, but fruit evaporation, because the difference between the two processes, both as regards quality and cheaper working, is very marked. In a recent pamphlet issued by the Department of Agriculture at Washington, the great progress made of late years in America in this connection is described. In Prunes alone it is stated that 2,914,599 lbs. were imported in 1888. In 1896, however, the Californian product was estimated at 55,200,000 lbs., and Washington, Oregon, and Idaho also largely engaged in Prune culture and evaporation, so that last year the product of American orchards exceeded 100,000,000 lbs. of dried Prunes. The increase of home production has been noted in the decrease of imports, which had fallen in 1897 to 736,978 lbs.—("Indian Gardening.")

— *PYCNOSTACHYS URTICIFOLIA*.—At this season of the year this plant comes in very useful for the intermediate house, as the flowers—besides being freely produced—are of an uncommon colour. It is a tropical African plant, and at first sight might be taken for a *Salvia*. When growing strongly, the Nettle-like leaves are often from 8 to 9 inches long by 7 inches wide at the base. The flowers are a rich, dark shade of blue, and are borne in dense conical racemes from 4 to 6 inches long, from the points of all the main and lateral branches. They commence to open about Christmas, and are in good condition during January and February. It is not a difficult plant to manage. Cuttings should be rooted in spring and be kept growing all the summer, the same treatment being given as is accorded to *Chrysanthemums*. When young they should be stopped frequently; by this means good bushy plants, in 8 or 9-inch pots can be had. After being grown outside all the summer they should be put into a cold frame in September, removing to an intermediate house as the buds begin to show. If planted out in a warm greenhouse growth is more vigorous, and if the room can be given plants 10 feet high with an immense number of flower heads can be had in a year from cuttings. A number of plants may now be seen in flower in the Mexican house at Kew.—W. D.

— **EMIGRANTS' INFORMATION**.—The January circulars of the Emigrants' Information Office and the annual editions of the penny handbooks show the present prospects of emigration. The notice boards are now exhibited, and the circulars may be obtained free of charge, at more than 300 public libraries throughout the country. In New South Wales matters relating to trade, labour, and industry are improving, and land settlement is increasing. The dairying industry is largely on the increase, and many new factories are being erected. The number of unemployed throughout the colony has become much less; scrub cutting at the West Bogan is almost the only Government work now being carried on for the benefit of those out of employment, the average wages there being 5s. 6d. a day. But the effect of the long drought, and of serious disputes between capital and labour, have made employment in many cases precarious. In Victoria farmers would do well. In South Australia a Government Labour Bureau has just been established for the purpose of facilitating the obtaining of employment. The Bureau is situated in Victoria Square, Adelaide, and branches may be established elsewhere. In Queensland, notwithstanding the late severe drought, which caused great losses in the western and central districts, settlement on grazing farms by practical men is steadily progressing, especially in the west and the north-west; the tick disease in the north has become much less prevalent. There is a general demand throughout the colony for ploughmen and other farm labourers. In Western Australia there is a good demand for farm labourers in many parts of the south-west. In Tasmania the demand for most kinds of ordinary labour is increasing there as the mines develop, and men able to take up and work a few acres of land will get a good price for vegetables. In other parts of the colony there is no general demand for more mechanics or farm labourers. In New Zealand ordinary labourers find plenty of work in country districts at this season of the year. In Cape Colony and Natal there is little demand for mechanics or labourers at the present time.

— **A SCOTTISH WEATHER GRIEVANCE**.—A Lothian correspondent expresses the hope that dwellers in the South are enjoying more seasonable weather than that by which northerners are, as he says, "tormented," and his outburst of grief culminates in the exclamation, "No ice for storing, and no curling!" It must be very sad for the fine old gardener, but perhaps the weather will change before June, so that he may have a hit off and be happy.

— *STERNBERGIA LUTEA*.—I send you a few flowers of *Sternbergia lutea*, to show how well it withstands the rough weather of the last month. It was on New Year's day by far the brightest flower in the garden in the open air, and will be for some time to come, as I find there are yet quite small buds to open. The bulbs were not planted until October last, which of course accounts for its flowering so late, its usual season being September and October. Judging from the results of this season's planting a succession of flowers may be had by planting at intervals.—J. H. LANE. [The flowers were very rich in colour, and must have materially brightened the already beautiful garden of Mr. Elwes at Colesbourne.]

— **COLONIAL PARCEL POST**.—The postage to be prepaid on parcels for Antigua, Ascension, Bahamas, Barbadoes, British East Africa, British Honduras, Beyrout, Ceylon, Constantinople (by direct steamer), Cyprus, Dominica, Falkland Islands, Gambia, Gibraltar, Gold Coast Colony, Grenada, Jehore (via Singapore), Lagos (Africa), Malta (by direct steamer), Montserrat, Nevis, Newfoundland, Niger Coast Protectorate, Niger Territory, St. Helena, St. Kitts, St. Lucia, St. Vincent (West Indies), Sarawak, Seychelles, Sierra Leone, Smyrna (by direct steamer), Straits Settlements, Tobago, Tortola, and Trinidad, is now for each parcel weighing not over 3 lb., 1s.; over 3 lb., but not over 7 lb., 2s.; over 7 lb., but not over 11 lb., 3s. A similar charge will be made in the postage on parcels from these places for the United Kingdom.

— *CUPRESSUS LAWSONIANA* FOR HEDGES.—The Oregon, or white Cedar (*Cupressus Lawsoniana*), is remarkable for the number of its varieties. In its native land it attains great dimensions—150 feet in height and 18 feet in girth, more or less. The wood is white and fragrant, and much in demand. In this country it is used chiefly for ornament and for hedges. For the latter purpose trees 5 feet or 6 feet in height, and planted at 3 feet or 4 feet distances, a useful hedge can be obtained almost at once. The root fibre is usually plentiful, and if ordinary care is exercised there is little risk attending the transplanting. It will, of course, be evident that this kind of hedge is employed for gardens and pleasure grounds, not for field purposes. The present time and season are especially suitable for planting this and kindred varieties.—C. E. CURTIS (in "Estates' Gazette.")

— **EXPORT OF INDIARUBBER FROM THE AMAZON REGION**.—The latest report of Mr. Churchill, the British Consul at Para, which is the chief port to which the shipping of the Amazon resorts, shows that the greater part of the great rubber production of the Amazon region is exported from Para. In 1896 the value of this export from Para was nearly three and one-half million sterling, of which Great Britain took over one and three-fourths million, nearly the whole of the remainder going to the United States. The quantity was 15,226 tons, the total export from the Amazon being 10,981 tons, the balance being shipped largely at Manaus, about one thousand miles up the river. The chief sources of production, says "The Times," are along the great rivers and islands in the Amazon belonging to the State of Para, the valleys of the main tributaries of the Amazon, such as the Parus and Madeira, and the Amazon districts of Bolivia and Peru. Mr. Churchill gives a long account of this remarkable industry in the Amazon region, its history, the mode in which it is now carried on, the profits, the varieties of the gum, and the like. The most important observation he makes under this head is that the supply is regarded by competent authorities as inexhaustible, because the tree is being continually reproduced by Nature. Some areas, such as Cameta, on the Tocantins, have become exhausted, but when abandoned for a time they recover, and many districts have not been tapped at all. The area producing para rubber amounts to a million square miles, and further exploration will probably show that this is under-estimated. The richest zones at present known are along the banks of the southern tributaries of the Amazon, and on the islands in the main stream. Some of the northern tributaries have not been explored. Cocoa and Brazil nuts are the chief exports after rubber, but they are of small importance compared to it; and although the region produced rice of excellent quality it is no longer cultivated, as all the labour is absorbed in the rubber industry, and the people live almost wholly on imported food.

— **LAYING TURF.**—The moist, mild weather prevailing affords an excellent opportunity for repairing bad places on lawns with new turf, or even for laying down a new one. Where hollow places exist the turf may be raised and fresh soil added, so as to bring it up to the surrounding level. Make firm and replace the turf, beating it down level.—E.

— **DECEMBER WEATHER AT DOWLAIS, GLAMORGAN.**—Rainfall 8.76 inches, which fell on twenty-five days; greatest fall 2.82 inches on the 26th. Temperature: Mean maximum, 44.226°; mean minimum, 34.807°. Highest reading, 55° on the 3rd; lowest, 23° on the 19th. Below freezing point on thirteen occasions. There were twenty sunless days. The wind was in the S.W. and W. on twenty-three days. A very dirty month throughout. The first nineteen days were wet with the exception of the 13th, then fine until the 25th. In the last eleven days 4.90 inches of rain was registered. Total rainfall for the year, 46.95 inches, which fell on 199 days, frost on 105 days. Total sunshine, 1135½ hours; sunless days, 143.—WM. MABBOTT.

— **HEAVY RAINFALL.**—Though we cannot afford space for ordinary tabulated forms of rainfall, we make an exception in this case as it exceeds 40 inches. Mr. Thomas Singleton, in sending the monthly amounts from The Gardens, Curraghmore, Co. Waterford, observes that when reading accounts by gardeners of the dry season of 1898 he has often felt he should "like to spare them some rain," as he has had "too much." Here follows his record of the monthly rainfall, 1898:—January, 4.37 inches; February, 1.59; March, 0.54; April, 5.17; May, 2.77; June, 3.49; July, 1.08; August, 4.23; September, 3.77; October, 7.23; November, 3.06; December, 4.75—42.59 inches. It will be observed that October was a very wet month, while January, April, August, and December were not parchingly dry.

— **METEOROLOGICAL RECORDS IN THE ISLE OF WIGHT.**—During the year 1898 at Newport there were 150 wet days, the total rainfall being 28.24 inches. The maximum temperature for the year was 85.8°, on the 15th of August; the minimum 24.6°, on the 22nd of March. The wettest day in the year was the 23rd of November, when 1.76 inch of rain fell. The average rainfall for the last twelve years is 29.57 inches. At Totland Bay, which is thirteen miles west of Newport, there were 137 wet days, and the rainfall was 25.60 inches. The hottest day was recorded on September 7th, when the thermometer registered 80.5° F.; the warmest night September 17th, 64.2° F. The coldest day February 22nd, 38.2° F.; and the coldest night November 23rd, 29.6° F. The wettest day was on February 21st, when 1.36 inch of rain fell.

— **DECEMBER WEATHER AT BELVOIR CASTLE.**—This month was very changeable, with almost double the average amount of sunshine, and was much warmer than November. The wind was in a southerly direction twenty-five days. The total rainfall was 1.99 inch, which fell on fourteen days, and is 0.09 inch below the average for the month. The greatest daily fall was 0.40 inch on the 8th. Barometer: Highest reading, 30.467 inches on the 21st at 9 P.M.; lowest, 29.129 inches on the 29th at 9 P.M. Thermometers: Highest in the sun, 58° on the 5th; lowest, 21° on the 31st. Mean of daily maxima, 49.67°; mean of daily minima, 38.48°. Mean temperature of the month, 44.07°. Lowest on the grass, 17° on the 31st; highest in the sun, 87° on the 18th. Mean temperature of the earth at 3 feet, 44.80°. Total sunshine, 63 hours 50 minutes. There were ten sunless days.—W. H. DIVERS.

— **A BALMY JANUARY SUNDAY.**—A finer day than last Sunday has rarely been experienced in London. As a daily paper remarked, it seemed to take us once more right out of the winter season. The sun shone with great power nearly all day, and even in the shade the thermometer rose to a maximum of 56°. This was as many as 13° above the average for the time of year, and was within a degree of the normal maximum temperature for the month of April. So high a January reading had not been registered in London since 1890, and in the course of the past fifty years there were only two warmer days, the highest point reached being in 1876, when the thermometer on the 31st rose to 58°. So far as we have gone, the present month seems to have been scarcely so mild as last January, but there has been in the southern part of the country nothing like genuine wintry weather, and with the existing state of atmospheric pressure there is no immediate prospect of such a change. The past few days have been remarkable for the persistence with which cyclonic disturbances have advanced from the Atlantic and passed northwards along our western and northern coasts. Owing to these movements the air has not only been mild, but highly charged with moisture, so that in the intervals of fine weather, the ground has remained extremely wet and muddy.

— **DEVON GARDENERS' ASSOCIATION, Spring Programme.**—January 18th, Mr. R. W. Hodder, "The Fungi Pests of our Gardens, with Notes on Rust in Chrysanthemums;" February 1st, Mr. J. Mayne, "Liliums and Their Treatment;" February 15th, Mr. E. J. Love, "The History of the Rose;" March 1st, Mr. G. Camp, "Plants for House Decoration;" March 15th, Mr. J. Stiles, "Chrysanthemums: Their Culture, with Hints on Dressing, Staging, and Judging the Blooms;" March 29th, Mr. G. C. Crabbe, "Pelargoniums: Their Treatment from an Amateur's Standpoint."—A. HOPE, 54, High Street, Exeter.

— **FRUIT CULTURE IN ASSAM.**—The experimental cultivation of fruit trees in Assam does not seem to have been attended with any degree of success, judging from the results recorded in the report of the local Agricultural Department for last year. It seems that six grafts of each of six varieties of fruit trees (it is not stated what the varieties were) were supplied during the year for experimental cultivation at Kohima and the Sanitarium ground at Nemotha, in the Cachar district. Some of these were planted in a cemetery! Others in the Lunatic Asylum grounds at Tezpur. Many of the imported plants have since died, but we do not feel any surprise. This simply goes to show that Assam is in need of a properly organised Botanical Garden, Agri-Horticultural Society, or Government Experimental Farm, where trials of indigenous and exotic plants of economic value could be conducted on a systematic basis. Experiments conducted on the promiscuous and haphazard system, noticed above, are not only quite valueless, but a waste of public funds and official energy. Assam abounds in planters who are keenly interested in all matters relating to the cultivation of plants of economic value, and we have little doubt that they would not only support liberally a local Agri-Horticultural Society, but would furnish valuable information to the Society and the local Agricultural Department.—("Indian Gardening.")

FRUIT ON DWELLING HOUSES.

FOR many years I have felt regret at the waste of wall space on buildings, and a "deal" in Pears from a wall this season has only added strength to my previous convictions. Pitmaston Duchess at 2s. per dozen wholesale may not seem a very high price, but with good crops, ten or twelve trees, similar to those from which the fruits referred to were gathered, would have yielded £15, and I have no hesitation in saying that had I been fortunate enough to have held a ton of such Pears, they could have been disposed of at as good or better prices.

Apart from the commercial aspect of the question, however, there is the domestic side—the growth and use of fruit for the home. In thinking over the subject one is inclined to speculate as to how many superficial acres of wall space in this country are covered with the beautiful forms of Ampelopsis, Ivies, Cotoneasters, Roses, and the many other charming climbers, that render the outsides of so many homes so very beautiful. Owners of large establishments who have walled kitchen gardens are quite justified in covering their abodes with creepers, and it is not for me to grumble. But to the dwellers in villas and cottages this does not apply, and to them some of our best Pears would, no doubt, be more than acceptable; and why not Plums, and in many cases Apples? On an eastern aspect Plums grow and produce good crops of fruit in gardens, and it is reasonable to suppose they would thrive equally well on dwellings. The same applies to Pears on a wall facing west. For any but the most enthusiastic of amateurs with ample spare time I would not recommend Peaches, but in many cases the back offices of premises facing north might be made to produce good crops of Morello Cherries.

With the facilities for learning now within the reach of all there should be no difficulty in mastering the art of pruning and training, but in a case of doubt there is usually some local gardener who will be ready to help, and to show as far as possible what is best to be done. In these go-ahead times what is the cost of a fruit tree? while the necessary attention after planting would scarcely mean more than a few hours in the course of a year. Place these items on one side of the ledger and the returns on the other, and who would not enjoy the delicacy of Doyenné du Comice, or the lusciousness of Marie Louise, or the grand proportions of Pitmaston Duchess Pears of his own production? This is saying nothing of the other useful fruits to be had in Plums and Apples. If either of these was in request then are there plenty from which to choose. I might venture to say this would be a method, if only in a very small way, of stopping some of the tremendous importation of foreign fruit, and the consequent outpouring of cash that might well stay at home.

There are difficulties to contend with, no doubt: dwellings are too near each other, and light is blocked, hard paths run close to the walls. The landlord might say, "I am not going to plant fruit on my houses." The tenant decides that as he may not stay long he will not work for the benefit of the incomer, and so on *ad infinitum*. But think of the Jasmine on the walls of houses with its silvery showers of fragrance, of the Roses that bloom so long and so sweetly: and again, of the Ivy covering the rude building materials with the glossy sheen of its leaves. Who planted these? Somebody, surely, and in doing so could not have thought of themselves alone, but of those who were to follow them in the years to come. Are they not appreciated, and would not fruit be equally as highly thought of?—J. SHALFORD.

LUTON HOO PARK.

THIS, the princely estate of Madame de Falbe, is situated a little over two miles from the busy town of Luton, the entrance from which is under an archway, with lodges on each side. Directly within the park the ground begins to rise towards the mansion, to which access is gained by a long drive through the park, which is well furnished with splendid timber trees. To the left is a large lake, about a mile and half long and nearly half a mile in breadth, well stocked with various waterfowl. Near the mansion is the entrance to the pleasure grounds, which extend to nearly 100 acres, and there are miles of well-kept gravel walks and acres of lawn. The illustration (fig. 7) gives a view of the mansion with trees in the foreground.

The grounds are beautifully undulated, and contain many features of interest. Trees, plants, and shrubs of every description have been planted with admirable discretion, while there are dells, ravines, roseries in various parts of the ground, and in a secluded spot is a graveyard devoted to canine pets. Gigantic trees, such as *Picea macrocarpa*, Cedars, *Picea pinsapo*, *Picea glauca*, *Thuia gigantea*, the Douglas Fir, *Araucaria imbricata* are only a few of the many that are conspicuous, many being from 40 to 50 feet high adorn the estate, as do grand Portugal Laurels, *Arbutus*, *Laurustinus*, and Weeping Hollies, 15 feet high, 15 through, sweeping the ground. An enormous Beech tree, 29 feet in circumference round the trunk, is well worth mentioning.

Clumps of *Kalmias*, *Rhododendrons*, with Lilacs and Laburnums, occupy a suitable position in the American garden, while the dell of hardy Ferns forms a most pleasing feature. In various situations in these extensive grounds one comes in contact suddenly and unexpectedly with plots devoted to diverse styles of gardening. For instance, there are two or three Rose gardens, herbaceous borders planted with the very best varieties of their respective sorts, one Rose garden devoted to the *Rugosa* varieties, in which the bright berries are very effective this dull season. Another is devoted to Hybrid Perpetuals, a third to Teas, and so on. Many good flowers could have been cut on the day of my visit during the first week in November.

Splendid specimen *Andromedas* attract one's attention, as do beds of *Acer Negundo variegata*, with *Tropæolum speciosum* climbing up their stems. *Iris Kœmpferi* in variety makes a novel and showy bed, and close by these in a quiet nook is an aviary of doves, who are allowed the liberty of going where they please. As one nears the stately mansion the borders of the principal walk are planted with a choice collection of herbaceous plants, annuals, &c., of which many were still in flower. Large beds are full of *Aquilegias*, dotted with various *Liliums*, *Tritomas*, and *Nicotianas*. Dahlias, too, find a place with *Antirrhinums*, *Pentstemons*, and scores of others. Over a portion of a trellised archway Crimson Rambler Rose wanders vigorously, and is most handsome.

MEMORIAL TREES.

The number of memorial trees that have from time to time been planted by royalty and other distinguished visitors is very large, and these alone make the demesne additionally interesting to visitors. Their variety and age may be gathered from the subjoined tabulated list:—

<i>Fagus purpurea</i>	... planted	Dec. 1878	H.R.H. Prince of Wales
<i>Quercus coccinea macrophylla</i>	Dec. 1879	H.R.H. Princess Christian	
<i>Quercus pannonica</i>	... Oct. 1880	Julia Countess of Jersey	
<i>Abies Clanbrilliana</i>	... Nov. 1880	The Honble. Jane Macdonald	
<i>Picea magnifica</i>	... Nov. 1882	Lady Berthwick	
<i>Wellingtonia gigantea</i>	... "	Lord Dorchester	
<i>Quercus pannonica</i>	... "	The Honble. J. J. Bourke	
<i>Abies excelsis aurea</i>	... Dec. 1882	Countess of Gosford	
" <i>Inglemani</i>	... "	Honble. F. Capel	
<i>Cupressus erecta viridis</i>	... "	Lady Rosamond Fellows	
<i>Picea concolor</i>	... "	Lord Dupplin	
<i>Abies Menziesii glauca</i>	... "	Lady Muriel Hay	
<i>Thuia gigantea</i>	... "	Honble. Sybel Capel	
<i>Pinus excelsa</i>	... Nov. 1883	Mons. de Falbe	
<i>Picea Pinsapo</i>	... "	Miss Claughton	
<i>Abies Finedonensis</i>	... "	Bishop of St. Albans	
<i>Picea magnifica</i>	... "	Lady Virginia Sanders	
<i>Picea nobilis</i>	... Aug. 1884	H.S.H. Prince Edward Saxe-Weimar	
<i>Cupressus Lawsoniana</i>	... "	H.S.H. Prince Edward Saxe-Weimar	
Purple Beech	... Dec. 1884	Madame de Staal	
Scarlet Beech	... "	Mons. de Staal	
Green Beech	... "	Comte Piper	
<i>Cedrus deodara</i>	... Dec. 1886	Comte de St. Priest	
<i>Abies Nordmanniana</i>	... "	Princess of Wales	
"	... "	Maria Marchioness of Aylesbury	
"	... "	Colonel Montague	
<i>Araucaria imbricata</i>	... "	Lady Emily Kingscote	
<i>Cedrus deodara</i>	... "	Marchioness of Ormonde	
<i>Wellingtonia gigantea</i>	... "	Prince John of Clutzberg	

TERRACES AND FLOWER GARDENS.

The terraces and flower gardens adjacent to the mansion are very extensive, and there are some superb specimen Bay trees 18 feet high, and as much through, in tubs here and there, that have a grand effect. The flower garden contains very large beds of a suitable design for the situation. In the centre is a grand fountain, and to give one an idea of the extent of this garden it may be stated that 80,000 bedding plants are used annually. Another year I hope to describe in detail this garden, as it is both novel and interesting when in perfection.

The panorama from the terrace is of singular beauty, as a large extent of country can be seen, with grand belts of trees beyond, which in full autumn glory were beautiful in the extreme. Then the noble trees in the park, the green sward, with fine herds of cattle, and the waterfowl on the lake, made a picture worthy a long journey to see. On the side of the mansion, in which is the main entrance, is a circular drive with an expansive lawn, with a central equestrian statue. I must not forget to mention some splendid clumps of Bamboos, which have been out some few years, and are very attractive.

THE GLASS DEPARTMENT.

The glass is very extensive. The first range is a long lean-to in several divisions. The late vinery containing Black Alicante, Gros Maroc, and Lady Downe's is full of vigour. The Vines were planted in February, 1897, and have given splendid results. In the Muscat of Alexandria house there has been a grand crop, while plants of Tangierine Oranges and 'pot Figs occupy the space under the Vines. Then comes a show house, 60 feet by 21, with Camellias planted on the back wall. The stages are occupied with well grown and profusely flowered *Bouvardias*, *Salvias*, *Cannas*, *Pelargoniums*, and *Marguerite*, a grand *Bignonia venusta* covering the roof. In the Palm house *Kentias* and *Cycads* are conspicuous, with *Cibotiums*, *Alsophilas*, *Adiantums*, and one of the largest specimen *Platyceriums* I have seen. The early vinery contains Black Hamburg, of which bunches are usually ready for the table in May, and preparations are already advanced for the next crop. The same variety is the favourite in the second early vinery.

The plant houses are of equal importance. A three-quarter span structure 48 feet by 24 is used as a store, the centre of which contains specimen Palms, some noble Bananas, which fruit freely, *Dracænas*, *Crotons*, *Anthuriums*, with flowering plants on the stages. In the cooler section trained *Azaleas*, occupy the centre, smaller plants the side, while grand plants of *Lapagerias rosea* and *alba* on the roof are very noticeable. A Peach and Fig house is used to advance *Chrysanthemums* to keep the show house gay. Of great value to Mr. Maycock are several plant houses, in which are 500 tree Carnations in 48-pots, dozens of well grown *Calanthes* producing enormous spikes, and *Cypripedium insigne* full of flower and bud. These two Orchids as seen here would be hard to beat for winter flowers. *Clerodendron fallax* flowering freely is a distinct attraction, and as an autumn decorative plant should be more extensively grown. *Malmaison* Carnations, of which there is a grand collection, will undoubtedly produce some handsome flowers. I noticed in these houses standards on 4 feet stems, with good heads, *Aloysia citriodora*, which is a great favourite with Madame de Falbe. There are a dozen or more of these, and they are certainly novel.

The Rose house is 50 feet long, 30 feet wide, and proportionate in height. In it was a show of *Chrysanthemums* worth going a long way to see. The plants were arranged in banks all round, and comprised all the best varieties in cultivation. Many of the blooms would have done justice and credit upon the exhibition boards. In another house the stages were about 500 plants of *Chrysanthemum Segur Melaine* in 48-pots, well flowered, intermixed with about 200 of the scarlet *Salvia splendens*. It was a novel and striking combination. A shelf over the path was devoted to *Cyclamens*. The plants were in excellent condition, and will shortly be in perfection. *Begonia Gloire de Lorraine* in 48-pots, nearly 3 feet high, 2 through, from top to bottom one mass of flower, mixed with Palms and pots of Roman Hyacinths, stage-draped Ferns, and *Ophiopogons* made an attractive display. Well-coloured *Dracænas*, *Crotons*, *Aralias*, and other plants suitable for table decoration are largely grown, as are *Stephanotis* and *Gardenias*. Another range is wholly devoted to Melon, Cucumber, Tomato growing, and the plants are still producing grand fruits. In the Tomato division some *Marguerite* Carnations, lifted from the open ground and potted, are flowering freely.

THE FRAME GROUND.

The frame ground is an important department, in which alone are Carnations of the best sorts to the number of about 18,000 young plants. Violets total up to over 3000 plants in the frames. Marie Louise, Prince of Wales, J. J. Astor, and Comte de Paris are the prime favourites. Mushrooms are grown extensively, and a finer crop would be impossible to find. The outdoor bank or ridge system is adopted, and they were literally covered with fleshy Mushrooms. Cuthbert's spawn was used.

The kitchen garden occupies 6 acres, and it was planted with fruit trees. A Peach wall 100 yards long produces grand fruit. Strawberries are grown in pots by the thousand, and for forcing Royal Sovereign, President, Vicomtesse Hericart de Thury, and Sir J. Paxton are the favourites. Vegetable supplies are an important factor on an estate like this, the house demand being very great, but from what I saw of the crops, and the utilisation of the ground, nothing is lost, grand successive crops being the order of the day.

Behind one of the long ranges are the garden offices, bothies, stoke-holes, and fruit room. These are well arranged, and the comfort of the young men is well studied, the rooms for the outside men being also very convenient. The fruit room is of good size and well arranged, and the contents at the present time comprise mainly Apples and Pears. Another good feature of this establishment is the gardener's house, conveniently situated near the offices. It is a solid, square-built erection, possessing superior accommodation, and is occupied by Mr. G. H. Maycock, the gardener in chief, who has held this important position for some years with satisfaction to his employer and great credit to himself, for none but a thorough practical all round man of great experience could manage such a place of importance as Luton Hoo.—A. OUTRAM.

PRUNING AND CLEANING VINES.

AFTER the leaves have all fallen from the Vines and all the Grapes have been cut, there is nothing to prevent the important operations of pruning and cleansing being carried out. This work is best dealt with as soon as possible during the present month, or earlier if convenient. Vines enjoy a rest, which they can indulge in if the superfluous growths are cut away promptly and all the cleaning disposed of, followed by cool treatment with free ventilation.

Pruning Vines requires intelligent care and good judgment. If the Vines are old and have formed spurs on each side a main rod, the orthodox method of pruning consists in shortening the lateral growths to one or two buds. Pruning so as to leave more buds may result in securing finer bunches, but it has the disadvantage of causing long spurs to be originated, which eventually prove inconvenient. Smaller and compact bunches usually appear from the lower buds, one of which only should be allowed to fruit. The other, if retained nearer

plan is to take a less bold, but still effectual, plan of renovation. Allow a strong growth to extend from the base originating in a suitable position. When it has grown beyond 6 feet, if strong, stop it at that length, allowing a fresh leader to grow as much as it likes during the season. If growths break out from the eyes at the base of the principal leaves on the length below the point of stopping, shorten them to the first leaf they make, continuing to do the same if subsequent growth is made. Give the new cane every opportunity to become well ripened.

The following season, after the winter pruning, only the first 4 feet of cane is retained, the rest being pruned away. The spurs on the old rod may also be removed as far as the new cane extends, because it will be necessary to have room and light for the future growth of laterals. From the upper bud of the new cane a leader may again extend, to be stopped at 4 feet, or less if vigour of growth does not warrant so much. A fresh leader can be allowed to grow at will as before, until pruning time in winter, when it is shortened back.



FIG. 7.—LUTON HOO PARK.

to the old rod than the fruiting shoot, must be kept as the lateral for pruning back the following year, thus preventing undue extension or elongation of the spur. Frequently the risk must be run of shortening the spur back into the old wood, when it is imperative to remedy unsightly elongation and trust to the starting of a dormant bud to form a suitable shoot. Such buds do sometimes extend growths without prior shortening of spurs, and it is desirable to encourage them when the reduction of long spurs calls for attention.

To make the best of these shoots and render them useful for the purpose they are intended for, they must be given sufficient room to extend in light and air, so that large principal leaves are formed which will build up good basal buds for subsequent pruning to. Stop them at the seventh leaf, and the sub-laterals to one leaf, and rub out weaker growths from the old wood competing with them.

Old Vines may be improved by dispensing altogether with ancient rods, especially when knotted and gnarled spurs so prevent a free flow of sap that only weak annual growths are produced. To cut the old rods boldly down is a desperate remedy, and will certainly result in no crop, but strong growths start and in time prove fruitful. The usual

Remove spurs as before. The same course may be pursued annually until a new rod has been fully built up, and the old one can be removed. All young canes must be kept in a depressed position, or the lower buds will not break well.

The cleansing of the rods must follow pruning, using some approved insecticide or softsoap, 4 ozs. to the gallon of water, in which a little sulphur is dissolved. Work the mixture well into every crevice. The barbarous method of peeling off bark should be avoided, but any very loose portions may be removed.

The woodwork and glass of the house ought to be effectually cleansed, but when the paint is in bad condition, a fresh coating should be given, white always being preferable for the interior of glass houses. Limewashing the walls is a process which must not be omitted, using newly slaked lime.

Dry borders must be moistened with water or liquid manure, and the surface of borders renewed with an inch or two of fresh compost. Free ventilation in favourable weather should be given to all ordinary vineries until March, when they may be kept closer and the Vines encouraged to break freely.—E. D. S.



ISLE OF WIGHT CHRYSANTHEMUM SOCIETY.

THE annual meeting of this Society was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided. The report and balance-sheet were adopted on the proposition of the Chairman. The balance in hand is £4 13s. 9d., which is satisfactory, considering the inclemency of the weather at last year's show. Sir Chas. Seely, Bart., was re-elected President, Dr. Groves Chairman, and Mr. C. H. Cave Hon. Sec. Several alterations were made in the schedule for improving the standard of excellence, giving variation and effect to the exhibition, and placing the Society in a better financial position. In the discussion suggestions were made by many old exhibitors and enthusiastic horticulturists, which will, no doubt, receive due consideration.

CHRYSANTHEMUM TRADERS.

UNDER the above heading, "A. D." seems (on page 13) as much "at sea" as the writers of those catalogue notes to which he refers. He asks, Is it trade bluff? I can only enlighten him upon one point—i.e., the N.C.S. is the cause of it all. He also asks, What do the public care about such trivial things? I think the public like to know facts, and so long as the N.C.S. give their gold medals to other things besides Chrysanthemums, and grown by nobody knows who, so long will the catalogue war go on. This is not the first or second year of splashes for effect and all the rest of it, and I do not think a continuance of the present system can be conducive to the permanent welfare of the Society. Does "A. D." think it can?—W. WELLS, *Earlswood*.

N.C.S. PRIZES.

THERE is at least a note of freshness in the literary combatant "A. D.'s" communication on page 13 last week. One would have thought he would have been among the last men to object to a little pen sparring in catalogues or elsewhere; but when he sees things that do not please him might he not ask himself—"Is there not a cause?" Can he answer a few questions on a subject that is not quite trivial to a considerable number of Chrysanthemum growers and supporters of the N.C.S.?

Was not the National Chrysanthemum Society established to increase the interest in and promote the superior culture of the Chrysanthemum? Have the whole of the funds provided by members—many of them hard working, genuine cultivators with little money to spare—been devoted in the form of prizes to real and actual cultivators of the products to which prizes have been adjudged? Is it reasonable and right that a special society, established for a special purpose, should go beyond what may be described as its charter, and spend the money subscribed in the form of medals for exhibits very different from Chrysanthemums, and granted to persons who never grew what they exhibited in the form of various plants, or other things which have been brought together for winning them?

Does any other special society in the world go beyond the object for which it was formed to the same extent as this? Do the National Rose, Carnation, Dahlia, or any other society take such flights outside their legitimate sphere as the N.C.S.? Does the grand autumn flower, with its commanding beauty, need crutches to enable it to hold up its head? Ought not it to be the last to need such props as are provided by the generosity of those to whom its resources are entrusted?

Blame not exhibitors who win the honours placed within their reach. Men of enterprise naturally take advantage of the opportunities afforded; and if they did not their negligence would not speak much for their business capacity. They are justified in winning medals when they can within the stipulations. But what of the policy of a great society that goes so far beyond its own special functions as to dangle prizes for products which do not, and in their very nature cannot, represent the cultural skill of the exhibitors who win them? Let "A. D." look at the matter from a rather broader point of view, and give his unbiased opinion on the points suggested, and any others that he thinks cognate to the policy of the N.C.S. He may then, perhaps, find a cause for catalogue splutterings.—A MEMBER, BUT NO TRADER.

BULBS.—As soon as bulbs placed under the plunging material have commenced growth and advanced an inch or two the pots should be removed and placed close to the glass in a frame. Shade at first, but gradually inure to the light. The green colour does not readily develop in the coldest weather.—S.

COMPOST FOR PEACH BORDERS.

YOUR genial and intelligent correspondent, "A. D.," asks (page 494, last vol.) for criticisms on this important subject. Like himself, I do not approve of the "recipe" he quotes. Throughout a long practice, and having had to do with a considerable variety of soils and climates (for I venture to say climate should be taken into account in this matter), I long since arrived at a dislike for elaborate mixtures for fruits and most other plants. My conviction and experience lead me to recommend what I shall term a simple maiden staple, with comparatively little else added to it, and giving especially animal droppings a wide berth.

In reference to Peaches, and, I may say, all stone fruits, I take it to be an established fact that they can be more certainly and easily grown to the greatest perfection in a rather strong calcareous loam resting on a well drained bottom. I believe I am correct in saying the limestone districts in this country produce the finest Peach trees, all other things being equal.

To produce the healthiest, longest lived, and most fruitful Peaches I would recommend, when it can be had, 6 inches, or not more than that depth unless the soil be exceptionally good, and of course including the verdure, from old calcareous grass land. This, stacked for six or nine months, and then having 2 cwt. of half-inch bones, 1 cwt. of bonemeal, one cartload of old mortar, and one load of pounded charcoal well mixed with twelve loads of the loam, will make a first-rate Peach border. If I used any quickly soluble manure it would be a very small quantity. It is presumed that the trees to be planted are young, and, as all very well know, such are apt to grow too strongly. Such a border will be more fruitful to begin with, and one that will form a sound healthy medium for being mulched and fed with more soluble manures when such become necessary.

I have referred to long-lived Peach trees. It may be interesting to relate that in 1858 I took charge of a Peach house in which there was a tree which, at that time, appeared to me to be about twenty years old. For the ten years I had charge of it I forced it to ripen its crops in April and May without my ever having done anything to the border except applying top-dressings. I had the pleasure to see this tree standing in the same place last summer, and was delighted to see my old friend still doing duty. This speaks much for its border, and perhaps more for the management of my successors. The variety is *Violette Hâtive*, a Peach yet hard to beat in many ways. I may say the natural soil of the garden is a splendid loam, and the climate bright and dry as any in Britain.

I should be sorry to convey the idea by these remarks that very considerable success in Peach culture is not attainable except when fine calcareous loam from an old pasture can be had. I have, no doubt like "A. D." and many of your readers, seen fine Peaches grown in ordinary good kitchen garden soil resting on a dry bottom, and not deeper than 18 or 20 inches, and your readers who cannot procure such soil as is considered the best should not be discouraged.—D. THOMSON.

In your issue of December 29th, 1898, your able correspondent, "A. D.," invites criticisms on making a Peach border. The recipe for the compost then given I consider too rich, and would consequently cause the trees to make long-jointed unfruitful growth. If about to make a Peach border I should prefer ten loads of good sound turfy loam, a little adhesive in texture, four loads of light garden soil, two loads of old mortar rubbish, and one sack of charcoal, broken about 2 inches long, all well mixed of the quantities required.

If the site were cold and the subsoil wet I should make the border a foot above the level of the ground, concreting the bottom, and adding 4 to 6 inches of drainage after the concrete was set, then cover the drainage with turf, grass downwards, or any coarse lasting material. If the subsoil were dry I should make the border level, 2 feet 6 inches deep, well firming the bottom, and place a layer of brick rubbish for drainage and cover it with turf or rough material. After the border was made and the trees planted and watered, mulch with long litter with the manure shaken out. When the trees were established I should feed from the surface by mulching, or with liquid manure, instead of giving a rich soil to begin with. I have proved this to be a very safe plan and successful.—T. T.

THE opinion of practical Peach growers is asked as to the suitability of the recipe given on page 494, last vol. The ingredients are ten loads of turfy loam, and six ditto of manure in various forms. I have no hesitation in condemning this mixture entirely. The fresh horse droppings and other additions to the turfy loam are quite unnecessary; in fact it would cause positive injury to any unfortunate Peach trees that might be planted in it. The trees would doubtless grow at a rapid rate, but before many months had elapsed that scourge of Peach growers, gumming, would be observed on many of the branches, and if several growers had made their borders according to

the above recipe, our editor would be inundated with inquiries for the cure of the evil.

A very little practical experience is worth a great amount of theory, and as Peach culture has been rather extensively carried out in the gardens of which I have charge, I will briefly state the simple ingredients we use. At the present time we have upwards of sixty trees planted under glass. Our soil is heavy on the magnesian limestone formation, too heavy for Peaches; we therefore use loam of a lighter texture, somewhat inclined to be sandy, in the proportion of one-half. To ten loads of the above we use about three barrowloads of wood ashes, and the same quantity of broken brickbats about the size of a pullet's egg. No manure of any description is used. The border is well drained with rubble, and a drain is laid in a convenient place to carry away the surplus water. The border is not made more than 18 inches in depth. The soil is made very firm and the trees planted. We formed a border on the above lines in the autumn of 1890. The trees were obtained from a well known nursery whilst they were in green leaf, as the house was intended for early forcing. They made rapid growth the first season, and during the past summer a heavy crop of large handsome fruit was gathered before the end of June. The majority of the trees were 12 feet in height, and, where they had room to develop, were as much through. The trees were and are now in the best of health.

All that is required to grow good Peaches is sound loam of medium texture. If the soil is deficient in lime some lime rubble may be added with advantage, but care is required in selecting, as the lime made from the magnesian limestone will often do more harm than good. Hence the reason we prefer broken brickbats where lime is not necessary.

If good Peaches can be grown and the trees kept in a healthy condition on the above simple lines, why use an expensive and unsafe concoction as mentioned in the recipe cited?—S., *Yorks.*

In response to the invitation of "A. D." for expressions of views, my experience leads me to think that the rich fare so often provided for Peach and Vine borders is not essential to the production of fruit either in quantity or quality. If the turfy loam and various manures were used less freely in the making of borders, more opening material being added, the borders would be in a condition to sustain healthy root action after the first few years. That turf freely used does induce rapid growth there is no doubt, as the roots, by the fermentation of the fibre, are in a mild hotbed; but after decomposition has taken place the soil settles into a cold mass through which water and air cannot pass freely.

For the past seven years I have had the management of three Peach houses. The trees have borne heavy crops of fruit each season, improving in health at the same time. They have all been lifted, but no fresh soil was used. The soil from one side of each tree was carefully picked from among the roots and burnt refuse freely mixed with it as hot as it could be obtained from the fire heap, as well as a few barrowloads of mortar rubbish. These were well mixed, and the following day the mixture was dry enough to bear ramming without running together. The drainage having been seen to, we commenced to fill in the border. As the soil was returned it was trodden and rammed as firmly as possible. When within 6 inches of the original border we commenced to lay in some of the roots, covering them with soil and treading it firmly; the surface was then mulched with short litter and a watering given. In May the whole of the borders were mulched with short litter. The trees were watered with weak liquid manure each time water was necessary.

Towards the end of the year the mulch was raked off, and a good dusting of lime pointed in. Later the houses had a dressing of earth-closet manure, watered in with stronger liquid manure. The borders are 18 inches deep, with from 3 to 6 inches of drainage. As the prunings of shrubs, trees, and old Pea stakes were used in burning the refuse, and these kept covered over to smoulder, the heap contained charcoal and wood ashes.

Chrysanthemums, Arums, Azaleas, and other pots were stood on the Peach and Vine borders; but the watering of these did not prevent the roots working on the surface, which we attributed to the firmness and porosity of the borders.—S. BACKHOUSE, *Shrewsbury.*

THE VALUE OF LIME.—It is well known that lime is a valuable agent in correcting the sourness of land, in unlocking the unavailable potash, phosphoric acid, and nitrogen in the soil, and as a general soil improver. Many plants are benefited by the application of lime to the soil, but some are injured by it. Experiments made at the Rhode Island Experiment Station show that Onion, Parsnip, Celery, Cauliflower, Spinach, Lettuce, Beet, Asparagus, Cucumber, Cabbage, Turnip, Peas, and Kohl Rabi are benefited by its use; that Carrots, Potatoes, and Rye are indifferent to liming; Sorrel and blue Lupines are positively injured by the use of lime. Lime is especially valuable to land that has been continually heavily dressed with stable manure, and which is showing signs of being less fertile than formerly.

SIR W. T. THISELTON DYER, K.C.M.G.

THE distinguished and popular director of the Royal Gardens, Kew, will be the recipient of a host of congratulations, in which we cordially join, on the occasion of the honour of knighthood conferred upon him in recognition of his services to Colonial Governments.

When Sir William, then Mr. Dyer, was appointed to his present position in 1885 we published his portrait and gave a sketch of his career, and said of him:—His devotion to science, and especially natural science, his notable antecedents, and his ten years' probationary work as assistant director of the Gardens, eminently fitted and recommended him for the appointment. The directorship of Kew is a post that requires of the holder a special training. It is one which no mere botanist, any more than no mere gardener, is capable of filling satisfactorily, but it requires a judicious combination of the two. These qualities are well met in Mr. Dyer, who, though eminently a man of science, has also a broad practical side which can be turned at any time in the direction where it is required. He knows that science without practice is dead, and that it is only when applied that it is really living.

Mr. Dyer was born on July 28th, 1843, in Westminster, and his early education was acquired at King's College School, and he entered the medical department in 1861 as Warneford scholar. In 1863 a junior studentship at Christ Church, Oxford, was offered for open competition, which he had the good fortune to obtain. His first appointment was that of Professor of Natural History in the Agricultural College of Cirencester. In 1870 Mr. Dyer became Professor of Botany in the Royal College of Science for Ireland in succession to Dr. Wyville Thomson. Part of his official duties in Dublin was to deliver a short course of popular lectures. Reports of these appeared in some of the Irish papers, and were reprinted in the "Gardeners' Chronicle." This circumstance brought him to the notice of the Royal Horticultural Society, from whom he received an invitation to join the staff as Professor of Botany with a seat on the Chiswick Board of Direction, and he returned to London in 1871. In 1875 the Government revived the office of Assistant Director of the Royal Gardens, and Mr. Dyer was offered the appointment. Having taken up his residence at Kew two years previously he had opportunities of becoming acquainted with the work of the establishment, and he accepted the offer, though with some misgivings, as it seemed to close the door finally to a teaching career, which he had then most at heart.

Mr. Dyer ("as was") is a Fellow of the Royal Society, and in consideration of his admirable management of Kew, and of services rendered to the Crown Colonies, her Majesty conferred upon him the distinction of Knight Commander of the Most Distinguished Order of St. Michael and St. George. May he long live to enjoy the well-merited recognition, which is a compliment also to botany and horticulture.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JANUARY 10TH.

AS is customary at the opening meeting of the year exhibits were by no means numerous. They were, however, fairly well diversified, and contained several plants of more than average interest. Orchids were good, as were the fruits from Mr. W. J. Empson.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with the Rev. W. Wilks and Messrs. G. Bunyard, J. Cheal, J. H. Veitch, W. Poupert, J. Gleeson, A. H. Pearson, A. Dean, A. F. Barron, W. Bates, W. Farr, W. J. Empson, G. Wythes, H. Balderson, F. Q. Lane, G. Reynolds, G. Norman, and J. Willard.

Mr. W. J. Empson, gardener to Mrs. Wingfield, Amptill, staged thirty-eight dishes of Apples. They were very good in quality, and well preserved. The best dishes were Peasgood's Nonesuch, Lord Derby, Bismarck, Smart's Price Arthur, Wellington, American Mother, Mère de Ménage, Prince Albert, Gascoyne's Scarlet, and Cox's Orange Pippin (silver Knightian medal). Mr. Hislop, Bletchley Park Gardens, Bletchley, exhibited a good dish of Russet Apple The Scotsman. Mr. J. Miller, gardener to the Right Hon. Lord Foley, Ruxley Lodge, Esher, staged a basket of Mushrooms (vote of thanks). Messrs. J. Christmas & Co., Worplesdon, Surrey, forwarded a dozen bottles of fruit wine, which were sampled by the Committee, who passed a vote of thanks to the sender.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Druery, J. H. Fitt, H. J. Jones, H. B. May, R. Dean, G. Stevens, W. Howe, J. Hudson, J. Jennings, J. F. McLeod, C. J. Sizer, G. Gordon, C. E. Pearson, C. E. Shea, J. T. Bennett-Poë, J. D. Pawle, Chas. Blick, H. Turner, E. T. Cook, George Paul, and Chas. Jeffries.

Mr. F. Miller, 110, Fulham Road, South Kensington, exhibited an extensive display of floral decorations. The flowers employed were Narcissi, Tulips, Lily of the Valley, Roman Hyacinths, white Lilac, and Freesias. The exhibit was very bright and attractive at this period of the year (silver Banksian medal). Messrs. Barr & Sons, King Street,

Covent Garden, exhibited a first-class strain of blue Primulas; the flowers were large, well fringed, and a good colour. Messrs. F. Sander and Co., St. Albans, contributed a group of *Acalypha Sanderi*, which were very bright, interspersed with the *Acalypha Godseffiana* and *Dracæna Sanderiana*.

Messrs. Jas. Veitch & Sons, Chelsea, staged a box of their Rhododendron Javanico-Jasminiflorum hybrids, comprising the forms Thetis, Souvenir de J. S. Mangles, amabile, Diadem, multicolor, Ruby, Ceres, Sybil, and Mrs. Heal. The same firm also staged baskets of *Skimmia oblata*, well berried; *Skimmia fragrans rosca*, and *Skimmia fragrans*; also well berried plants of *Skimmia japonica*. Large pans of *Davallias intermedia*, *Mooreana*, and *deccora* were also staged from Chelsea. Mr. Peter Blair, gardener to the Duke of Sutherland, Trentham, exhibited a pan of *Saintpaulia ionantha alba*. Messrs. Hugh Low & Co., Enfield, sent a plant of *Gerbera Jamesoni* in flower. Mr. R. B. Leech, Wood Hall, Dulwich, exhibited a large vase of *Asparagus deflexus*, which was well berried. Mr. H. Squelch, gardener to E. Speyer, Esq., Dorking, staged a white *Chrysanthemum* named Elaine Squelch.

ORCHID COMMITTEE.—Present: H. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, T. W. Bond, S. Courtauld, R. B. White, H. Little, F. Sander, J. Gabriel, H. Ballantine, H. J. Chapman, W. H. Young, F. J. Thorne, H. T. Pitt, E. Hill, W. Cobb, J. Douglas, H. M. Pollett, and de B. Crawshay.

Messrs. Jas. Veitch & Sons, Chelsea, showed a very pretty and interesting group of Orchids, staged in their well known style. The chief features were well-flowered specimens of *Cymbidium Traceyanum*, the old *Oncidium ornithorhynchum*, *Lælio-Cattleya Dominiana langleyensis*, *Lælio-Cattleya* × *Pallas*. The pretty little *Dendrobium Endocharis*, *D. Cassiope*, and *Cypripediums Creon*, *Leeanum*, *C. Lecanum giganteum*, *Euryades*, and *Niobe* (silver Flora medal).

Messrs. B. S. Williams & Son, Upper Holloway, exhibited a beautiful group of *Cypripediums*, which comprised a great variety of well grown forms. The following were the most notable—*C. Leeanum superbum*, *C. Measuresianum*, *C. nitens*, *C. insigne Wallacei*, *C. Pitcherianum*, Williams var., *C. Sallieri*, and *C. discolor* (silver Banksian medal). Messrs. F. Sander & Son, St. Albans, contributed a small group of Orchids, which included *Cattleya Trianae* var., *C. Harrisoniae* var., well flowered plants of *Phaænopsis Smartiana* and *Oncidium Rogersi*.

CERTIFICATES AND AWARDS OF MERIT.

Angræcum Veitchi (J. Veitch & Sons).—A hybrid between *A. eburneum* and *A. sesquipedale*. A very fine cross, the sepals partaking the colour of the pollen parent, the petals almost white, and the lip a clear satiny white. The long spur of *A. sesquipedale* was reduced by one-half. A silver Flora medal was awarded the raiser for the first cross of the *Angræcum* (first-class certificate).

Cypripedium Schlegelianum superbum (N. Cookson).—A very beautiful form, the petals and dorsal sepal heavily spotted with deep crimson (award of merit).

Cypripedium bellatulum, *Dulcote* var. (W. Cobb).—A remarkable form; the petals and dorsal sepal are blotched with deep crimson (award of merit).

Epi-Cattleya Mrs. Jas. O'Brien (J. Veitch & Sons).—A hybrid between *Epidendrum O'Brienianum* × *Cattleya Bowringiana*. The flower is purple-rose throughout and very distinct (award of merit).

Lælia anceps rosefeldiensis (De B. Crawshay).—Sepals and petals dark rose purple, petals overlapping the sepals; lip dark, outside side lobes white, disc of lip pure white, tube deep purple (award of merit).

Odontoglossum Ruckerianum Rochford's variety (T. Rochford).—A very fine form, the petals are heavily barred with cinnamon (award of merit).

Sophranitis Rossitima (W. H. White).—A very bright orange colour throughout (award of merit).

EELWORMS.

In the *Journal of Horticulture* of the 23rd of June, 1898, page 521, there appeared an exhaustive and very able article by Mr. G. Abbey on the action of silico-fluorides on crops and pests. The subject was of special interest to me at the time, as I had been much troubled by the ravages of eelworm. I, therefore, determined to try the effect of the silico-fluoride of ammonium in the manner suggested by Mr. Abbey.

I had a border, 10½ yards by 13 feet, which had been prepared for Tomatoes. I had used it before for this crop, but, owing to the prevalence of eelworm, with poor results. I obtained 2 bs. of the silico-fluoride, dissolved it in 32 gallons of rain water, and watered the border with the solution. The Tomato plants (160) were then put in and grown in the usual way. I am bound to say that the crop I obtained was a great improvement on the preceding one, although on pulling up the plants recently I observed that the eelworms were not all gone. Still, I have formed the opinion that another dressing of the silico-fluoride would have the effect of completely destroying them.

As this substance, like other insecticides, acts by contact, it would perhaps be better to use a weaker solution—say, half ounce to a gallon of water, and to apply the quantity in two waterings instead of one, turning over the soil between the operations. For plants in pots a very weak solution is essential. I found that the liquid I used was too strong for a plant in a 24-size pot, which was killed by it. This fact will give a good idea of the powerful action of the salt.—M. POYSER Cheshunt.

GROUPING PLANTS FOR EFFECT.

WHAT TO IMITATE AND WHAT TO AVOID.

HAVING dealt, on pages 15 and 16, with several points that ought to be strenuously avoided, I now turn my attention to items worthy of imitation, and naturally these will largely be the opposites of the points previously noted. However, there are a few things that should be mentioned. The first consideration must be a good background—that is to say, something more natural than canvas or a painted wall. Canvas with the light shining through has a bad effect, and no matter how closely together the plants may be placed, some of this will be seen. I have tried many things—natural bark laid on the boxes in which the plants have been brought, and built up to form a rustic screen, and a moss screen made in sections, and both have been found effective. If there is any credit attached to this I may, without conceit, claim it, for until such backgrounds were made by myself I never saw one; but evidently the idea has caught, for it is common now to see it done. Even in this case do not do the same thing too often. I never have had two alike, and see no signs of dearth of ideas yet. Water has a lovely effect when it can be used rightly, but avoid a fountain, or, as some have done, two little fountains, one at each side at exactly the same distance, and both sending their sprays the same height. No; let us have a dripping well, a miniature cascade—something like we see in Nature. There must be nothing mechanical, and whatever is associated with water let it harmonise, such as Reeds, Mosses, Bamboos, Aroids, and aquatics.

Quality of plants is sometimes ignored in grouping, and it has been said that almost anything will do. It may be admitted that a skilful hand will sometimes beat a man at arranging for effect who has ten times better material, but then a man could do a long journey on an old-fashioned boneshaker, though he could do it much quicker and better with the latest pneumatic. Always endeavour to place each plant so that it seems to be at home. A plant of a shade-loving nature should not hang over a gandy neighbour whose colour has been drawn from the sun. Wherever a plant is put let it look natural. I have seen beautiful sprays of flowers, which would arch like some miniature rainbow, tied up to the very point to straight stakes, or twisted round and round until they look like a floral football. I like to see both plants and flowers left as much as possible to themselves. Of course it is necessary sometimes to use stakes, but let it be done so that while keeping the leaf, shoot, or flower where they are wanted, the natural contour is preserved.

It is wonderful how much better a plant will look by perhaps moving it only a few feet. It was placed, and somehow did not please, but let it be moved and in a moment you say, "That's it! Why is this? In the first instance there was something clashing with it. Some may say, "What is meant by that?" It might perhaps be described as a parallel with a case of two clever men meeting in an assembly and both wanting to shine, and it need not be added that under such circumstances things as a rule do not work smoothly, and often neither is seen at his best, which would not have happened if only one had been there. So with plants, both in flowers and foliage, there must be a sort of sympathetic blend—a gradual toning off, in colour and form. No harsh, sudden jumps from one thing to another, and no two grandly grown plants, looking as though each thought itself better than its neighbour. Everyone must be aware many of our leading exhibitors have taken this point into consideration, for sometimes one may read their thoughts, when making their groups, which would perhaps be something like this, "Now, my friend, I do not want to cause any jealousy between you and that party who is in charge of the other corner, so I must lower you a quarter of an inch, or he will not like it." Corners? forsooth! Why corners at all? I found fault at the beginning of my paper with the old house-roof fashion, but really the present style may become quite as monotonous.

I think if our schedule framers would help us, we might remedy this and a great many more things, which are nice sometimes, but are becoming a trifle stale. I promised in the early part of my paper to say something about the makers of schedules, and hinted that to them we must in the future look principally for improvements in our exhibitions. Great deeds have been done in the past by promoters of shows towards making exhibitions more attractive. For my own part I would alter the arrangements of exhibits, both in putting them in different positions and different forms every year. What is more discouraging to the mind of the visitor than to know what he is going to see before he gets to the place? A remedy might be found for all these faults of monotony; and for the groups I would suggest that the roughest piece of ground be chosen, and if it is not naturally rough dig it out, and make one year dells, another year rough banks. In some fields they are already there, and in many others might be easily made. Lay water on for the use of the exhibitors, to do what they like with it; run the groups all shapes, and have pathways in and out amongst them; and in doing so achieve the very desirable object of making the tents more like a garden.

Of course, as I have already said, effect may mean almost anything, according to the ideas and capabilities of the persons asked to adjudicate, but, generally speaking, if the suggestions made above are followed and improved upon little will go wrong, as the principal societies at any rate are particularly careful in selecting the judges.—GEO. WILSON, *Swanland Manor, Hull*.

SPIRÆA JAPONICA.—Clumps of *Spiræa japonica*, after potting, should be kept moist in a cold frame. The roots will commence action, and cause the crowns to burst into growth. Introduce into warmer structures, and force into flower in a strong, moist heat, giving water freely.—S.

THE YOUNG GARDENERS' DOMAIN.

EUONYMUSES AS GREENHOUSE PLANTS.

AMONGST hardy evergreen shrubs there are few so pretty for pot cultivation and greenhouse decoration as *Euonymus japonicus aureo-variegata* and *E. radicans albo-marginata*. The first named has deep green and beautifully bright golden marked leaves, and is the more effective. The foliage of *E. radicans* is green in the centre, and edged with pure white. Both are easily increased from cuttings, eight or ten of which may be placed in a 5-inch pot, in some peat and sand. They will root in a close frame at nearly any period of the year.

Immediately the cuttings are rooted they should be potted singly in 3-inch pots, the compost consisting of equal parts of loam and peat, with an addition of coarse silver sand. As soon as they begin to root into this there is no danger of them suffering from exposure, for when placed in the greenhouse they soon begin to make progress; and when quite small are extremely useful for edging stages. Plants in 3-inch pots will attain the height of 15 inches and 6 inches through, and when this size is reached, if desirable they can be transferred to 5 or 6-inch pots. The same compost should be used at this and all subsequent pottings. *Euonymuses* may be potted at any time and returned to their old quarters, as they do not require to be kept close and shaded, like many plants after potting. New roots are produced freely, and on this account large quantities of water are required in the growing season. Splendid specimens can be grown in 10 and 12-inch pots, while larger pots and tubs may be requisitioned if desired.

The variety *E. japonicus aureo-variegata* has a good natural habit without any training, though sometimes the leading shoots may require a stake. Side shoots that are inclined to straggle from the line of the others may be tied into a vacancy or cut back. The bottom growths seldom fail to extend in proportion to the main shoot going upwards, and of course the leader may be stopped at whatever height is desired. Pyramidal form is the best. *E. radicans albo-marginata* has a trailing or climbing habit. It hangs over the sides of the pot, and in this style looks very pretty. It may also be made to assume a pyramidal shape by attention to staking and tying through the growing season.

Both alike are subject to become infested with aphids. Occasional syringing does much to remedy this, and is the best way of keeping the foliage clean and healthy. When well grown the *Euonymuses* make conspicuous objects for decorative use, and fully repay any attention in their growth. They are not sensitive to a few hardships, and for either greenhouse, conservatory, or porch decoration always prove their usefulness.—INTERESTED.

THE CULTURE OF FOLIAGE PLANTS.

WITH what satisfaction does the gardener—yes, and his subordinates—enter the plant stove and gaze in admiration on the clean, healthy collection of foliage plants. The culture of foliage plants is one of extreme interest, and to some rather difficult. But what can be more interesting than to watch and attend to the gradually developing growth, the brilliancy of increasing colour, until the plant or collection of plants stand before us, objects of rare beauty in themselves, and calling forth admiration from all who inspect them.

CROTONS.—These rank amongst the most popular foliage plants, and their many good points, both in colour and usefulness, certainly entitle them to a prominent position. The main object to be attained with regard to *Crotons* is short stout growth and brilliant colouring. If they can have a house devoted entirely to their culture so much the better, but where that is not possible grow them in the most exposed position in the stove. Plenty of moisture, both at the roots and in the atmosphere, is essential, and on no account shade them, with the exception, however, of freshly rooted or newly potted plants, and then only for a few days until they have made a start.

Propagating is effected in two ways—namely, by cuttings and ringing. Insert the cuttings in small pots in light soil, and plunge in a warm propagating case with a temperature from 75° to 80°, and keep close for a few days. When rooted they may be potted into 3-inch pots, and for some purposes, such as table decoration, edging the plant stove, and other purposes, this size will be found large enough. When this is the case, and the pots are full of roots, feeding may commence, gradually at first, increasing the strength of the manure water as the plant becomes stronger and more robust. When larger plants are required pot as often as necessary, but avoid overpotting, as weak growth is the result. A suitable compost for *Crotons* is loamy turf, leaf soil, half-decayed cow manure, charcoal and sand added. Some of the best varieties for general purposes are *Prince of Wales*, *Warreni*, *Laingi*, *Chelsoni*, *Readi*, *angustifolius*, *Newmani*, and many more.

DRACENAS.—These are very useful and ornamental foliage plants. Some of the hardier varieties—such as *D. indivisa*, *D. congesta*—are valuable, especially in winter, as they take less harm in cold passages than some of the tenderer varieties. There are several methods of propagation. The more usual mode is to take off the top and root it in a pot; then cut the stem in pieces, taking care that there is a bud to each division. Lay these in a pan of cocoa-nut fibre refuse and sand, damp slightly, and put in a good bottom heat. When rooting and growth has commenced, and the plants are large enough, pot into small pots in light, moderately rich soil, and pot as often as necessary. Ringing is also resorted to by some growers, and is a fairly successful method. It is a good plan to shade these slightly in sunny weather, as they are liable to scorch if water happens to lie on the foliage. *D. terminalis* is rather an

old variety, but still very useful. *Dracenas Goldiana*, *pendula*, *elegantissima*, *Bausei*, and *Cocperi* rank amongst the choicest varieties.—E. J. B.

(To be concluded.)



FRUIT FORCING.

Vines.—*Earliest Forced in Pots.*—The heat about the pots must not be allowed to decline, but bring the fermenting materials up to the rims, pressing them down, yet not so as to raise the temperature above 70° to 75°. A heap of Oak or Beech leaves and stable litter should be in the reserve ground, to admit of a supply of prepared material being obtained as required. When the Grapes are set thin the berries carefully, supply liquid manure to the roots, and place some turves, grass side downwards, around the rims of the pots, so as to form a dish, the turves extending over the rims and resting on the fermenting material, and fill the dish with decayed manure. This will encourage surface roots, which will extend to the turves over the rims of the pots and into the fermenting material, and thus greatly assist the Grapes in swelling.

Early Houses—Exercise great care in ventilating, as sharp northerly and easterly winds, with cold draughts, injure the foliage, causing it to become stunted and crumpled, but judicious ventilation is essential to sturdy growth and well developed foliage. A confined moist atmosphere, on the other hand, causes the growth to become lean and drawn, the leaves thin and poor in texture, therefore liable to be scorched by the sun and fall a prey to red spider. Attend to disbudding and tying down the shoots before they touch the glass, being careful not to displace them from their sockets or cause them to snap by too sharp bending and too tight tying. Stop the bearing shoots near two joints beyond the show for fruit where the space is limited, but where there is room for lateral extension allow a joint or two more, and then let the growths extend so that an even spread of foliage fully exposed to light will be insured, yet avoid overcrowding, as that is fatal to satisfactory results. Remove all surplus bunches, and when they come into flower maintain a day and night temperature of 70° to 75°, with a decline, however, of 5° through the night, and a rather drier atmosphere.

Houses to Afford Ripe Fruit in June.—There must not be any further delay in starting the Vines intended to produce Grapes at the time named. If the roots are partly inside and partly outside, the latter border must be protected with leaves or litter, so as to prevent the soil being frozen, but this ought to have been attended to in November. Supply the inside border thoroughly with water, but only to make the soil evenly moist, as excessive waterings in the early stages hinder root formation, and tend to induce sappy growth with shanking later on. If the Vines are weak supply liquid manure, not too strong, after the border has been made fairly moist. Sprinkle the rods twice a day, depressing young rods and canes to a horizontal level or below, so as to insure the buds breaking evenly. Maintain a temperature of 50° to 55° at night and on dull days, advancing to 65° from sun heat, continuing those heats until the buds begin to swell, when gradually raise the night temperature, so as to have it 60° by the time the Vines come into leaf, and to 65° by day artificially.

Vines from which the Grapes have been cut.—The sooner the Vines are pruned now the less danger is there of their bleeding from the wounds when the sap rises. It is a good plan to dress the cuts with styptic or patent knotting or French polish whilst they are dry, so as to close the pores of the wood, as a safeguard against bleeding. Cut to a plump bud as near the base as possible, two buds being sufficient to leave where the wood is stout and short-jointed, but where the practice has been followed and not proved satisfactory, the operator may prune to the best bud on well-ripened wood. This will cause the spurs to become long, and a shoot must be trained from the base to displace each spur after its shoot has borne fruit. Thoroughly cleanse the house, washing the glass with clear water, the woodwork with disinfectant soap and a brush; limewash the walls, and remove the loose bark from the Vines, avoiding peeling and scraping that may injure the live bark, and wash them with a solution of caustic soda and commercial potash (pearlash), 1 oz. each, to a gallon of water, applying with a brush carefully and not excessively, or use some approved insecticide. Surface-dress the borders, clearing off the loose surface, using fresh loam, with a handful of sulphate of potash, and a 6 inch potful of steamed bonemeal to each barrowload of loam. Keep the house as cool as possible to secure complete rest. If there are plants in the house only afford fire heat to exclude frost, not exceeding 40° to 45° by artificial means.

Late Grapes.—These are best cut with all the wood that can be spared, and the ends of the shoots placed in bottles of water in an inclining position in a Grape room, dry fruit room, or an empty room from which frost is excluded; but not warm (above 50°), or the Grapes will shrivel. This will admit of the Vines being pruned and the house being cleaned, and it is much better than allowing the Grapes to hang on the Vines, pruning having to be deferred until a late period, whereby the latter are liable to suffer through bleeding and want of rest. Maintain a temperature of 40° to 45°, with a dry atmosphere in houses where Grapes are

hanging, and avoid a close atmosphere when the weather is favourable for ventilation. Examine every bunch frequently, and remove all decayed berries.

Strawberries in Pots.—The earliest plants must not be pushed too rapidly, especially in severe weather, 50° to 55° at night being sufficient for those that were started at the beginning of last month, and 60° to 65° by day; but it is better to err on the safe side, therefore 5° less in the absence of sun, the weather being cold, is advisable. Scrutinise the plants closely, and if any aphides are found fumigate the house so as to destroy the pests before the flowers appear. Mildew sometimes fastens on the opening buds; in that case dust with flowers of sulphur. Place more plants on shelves in Peach houses, or in vineries started about this time. The pots should have the drainage rectified if necessary, the surface soil removed or freed of moss or other matter, and be washed clean. A top-dressing may be given of rich material—say, horse droppings—rubbed through a half-inch sieve, with a handful of a mixture of three parts steamed bonemeal and one part sulphate of potash (mixed) to each peck of horse manure. La Grosse Sucrée, Royal Sovereign, Vicomtesse Hericart de Thury, and President are excellent varieties for introducing now. Noble and Auguste Nicaise are also suitable.

THE KITCHEN GARDEN.

Seed Sowing.—If the weather keeps mild and dry long enough for the surface of the ground to dry, many gardeners will be tempted to commence seed-sowing. If, however, previous experience is any criterion, this will mean so much labour and seed wasted. There is time yet for a severe, long sustained frost, and in any case the soil below the surface is far too wet and cold to promote seed germination. Early in February is quite soon enough to sow Peas, Beans, Spinach, Lettuce, Radishes, and other seeds in the open or on warm borders, especially in the case of the heavier retentive soils. In the meantime raise Peas and Broad Beans under glass for planting out on warm borders with a view to having early crops.

Lettuce.—Plants raised in the open to stand unprotected through the winter are in such a forward condition that only a moderately severe frost will cripple and probably destroy them wholesale. A considerable number of plants might, weather still permitting, be planted thickly in hand-lights or under bell-glasses and cloches with advantage. Moving them would check the growth, and the protection afforded would carry them through a moderately severe spell of frost. In order to be on the safe side, sow seed of Cos varieties thinly in boxes, placing these in gentle heat and not far from the glass. In this way a number of sturdy plants, which may be hardened for early planting out, will be available.

Forcing Lettuce.—Cabbage Lettuces such as Early Paris Market, Golden Queen, and Commodore Nutt, force readily. The finest hearts are obtained with the aid of mild hotbeds and shallow frames, but excellent produce may be had by planting in boxes of rich, loamy soil, and placing these in structures where a gentle heat is maintained. Sow seeds at once, this whether a stock of autumn-raised plants is available for early forcing or not, thinly in pans of light loamy soil, and place in gentle heat to germinate. When the plants are well up raise them to near the glass, still keeping them in gentle heat, and be careful not to injure them by syringing. Quite small plants succeed well dibbled in where they are to grow. Six inches of good light loamy soil with a fine surface, over a gentle hotbed, is all the preparation needed for either early or successional Lettuces. Seeds of Cos Lettuces may be sown now thinly in boxes of good soil and placed in gentle heat to germinate. Before the plants become drawn move the boxes to shelves near the glass in a warm greenhouse, where, if properly looked after, the plants will attain to a serviceable size.

Mustard and Cress.—With Endive failing and Lettuce not forward enough to cut, there is all the more need to grow Mustard and Cress extensively and well. Moderately rich perfectly fresh soil is necessary for these small saladings. Sow the seed thickly on the surface of the previously well-moistened soil, press it in evenly, but only cover the Mustard seed, and that very lightly. Place the boxes in a forcing house, or in a temperature seldom below 60°, and cover with mats or brown paper, not reducing this heavy shade till the salading is about 2 inches high, with a view to having long well blanched stems, such as are produced by market growers.

Early Tomatoes.—Plants raised late last autumn and now in small pots ought to be moved into their fruiting quarters at once. A light position and a well heated house are essentials, early Tomatoes succeeding well in the narrow span-roofed houses, in which Melons and Cucumbers are usually grown. They may either be placed in 11-inch or 12-inch pots, arranging these along the fronts, or be planted 12 to 15 inches apart in a narrow square-topped ridge of soil. If there are wooden front stagings over hot-water pipes, cover the woodwork with slates, placing on these a thick layer of ashes. Pot firmly in a moderately rich loamy soil, to which a sprinkling of Vine manure or bonemeal is added; the plants to be trained straight up the roof trellis, and confined to a single stem. Water sparingly at first, taking care, however, not to allow the old ball of soil and roots to become quite dry. A temperature of 55° to 60° by night, with an increase of 5° to 10° in the daytime, according to external conditions, is suitable.

Sowing Tomato Seed.—If seed of a free-setting early variety is sown now, the plants resulting should produce ripe fruit in May. Sow the seed thinly in pans of light soil, and place in a brisk heat to germinate. Raise the young plants well up to the glass, and when the second pair of leaves is well advanced place the plants singly in 2½-inch pots, sinking them to their seed leaves. Under this treatment sturdy plants are soon available for planting out or shifting into larger pots.

THE BEE-KEEPER.

PROTECTION OF ENTRANCES.

BEES wintered in the open air, as is the prevailing custom in this country, are liable to be affected by the many changes in the weather at this season, as it is somewhat difficult to keep the bees at an even temperature. Many apiarians are tempted to close the entrance to their hives during the prevalence of high winds or blinding snow-storms. We do not agree with this plan. Not that any harm would happen to the bees if the entrance were re-opened directly the storm was over; but there is always a danger of this being neglected, and for this reason, if no other, we do not recommend its adoption.

SHADING THE ENTRANCES.

Although it may appear somewhat out of character with the weather to speak of shading hives at midwinter, it can with advantage be done from now onwards. It is the close attention to the details of management that makes the successful bee-keeper, and it is as necessary at this season as at midsummer.

We never under any pretext close the entrance to our hives. But shading from the direct rays of sun is successfully practised. There are various ways of doing this, either by placing a mat, sack, or something similar, over the top of the hive, and allowing it to hang well over the front. This will have the desired effect, as the bees will not be tempted to leave their hive during a spell of bright weather when the temperature is low. Another advantage derived by using a covering in this form is the protection afforded during a heavy fall of snow, as the snow falls quite clear of the floor board, which is thus kept comparatively dry, and after the storm is over, if the covering is removed bodily and well shaken, there will be no snow adhering to the hive. The coverings may again be replaced if necessary. There is nothing more penetrating than melted snow, and stocks often suffer severely from dampness in the hive owing to the snow being allowed to gradually thaw instead of removing it the first opportunity.

Another very simple plan we practise to obstruct the light, but not the air, and prevent the snow from being driven in at the entrance, is done by using a piece of wood or slate placed in a slanting position against the entrance. Whatever is used for this purpose should be slightly larger than the open entrance, and if placed in the right position will have the desired effect. It should be so fixed that any bees which may by chance leave their hive will be able to return.

SECURING ROOFS.

It is useless to expect bees to winter well unless the roofs are made secure, as it is quite a common occurrence for them to be lifted off the hives and blown some distance away during the prevalence of high winds. When this happens during the night, and is followed by a heavy downpour of rain, the interior of the hive will become saturated before the bee-keeper is aware of it. If the roofs have hinges and are fastened to the body of the hive, the wind will have little effect unless the hive is blown over. But the majority of hives are made so that the roof lifts off bodily.

There are various ways of securing them, either by passing a strong cord round under the floor board, and fastening it securely over the roof, or fasten a brick at each end of a strong cord, pass it over the roof, and allow the bricks to hang clear on each side. If the hives stand singly, and are not on a stand, a peg driven into the ground on each side, and a cord passed over the roof and fastened to the peg at both ends, will have the desired effect. Or if the roof is not span-roofed, a couple of bricks placed on the top will answer the same purpose, and all will be well.—AN ENGLISH BEE-KEEPER.

HOW ENGLAND IS SUPPLIED WITH HONEY.—English bees are unable to produce as much honey as England needs. Every year we have to import 2,250,000 lbs., of which the declared value is £31,000, or about 3½d. per lb. Among the countries engaged in supplying our markets with this product the principal are the United States, Chili, and Peru, the other contributors including the British West Indies, France, Australasia, Canada, Germany, Italy, and the Spanish West Indies. No statistics of the quantity of honey produced in the United Kingdom are obtainable, but it is quite evident that bee-keeping is capable of being much more profitably developed than it is.—("Westminster Gazette.")



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Vines in Outside Borders (E. B.).—We should await a season's experience before taking any strong action. Somewhat old Vines in outside borders often succeed very well without lifting, though when confined to limited areas this may often be done with advantage. We should encourage more lateral growth so as to strengthen the Vines, but only so far as it can be done by full exposure of the foliage to light, then you would get better bearing wood and plumper buds. If pruning has not been done leave a bud or two more than in the orthodox method. Apply a top-dressing of some approved Vire fertiliser now, and feed liberally during the growing season, but above all things avoid making the soil sodden, and mulch lightly in advance of drouthy weather.

Neapolitan Violet Leaves Diseased (W.).—Yes, we can tell you that the spotted and curled-up appearance of the leaves is caused by a disease in the plants, a parasitic fungus, *Peronospora Violæ*, which has been unusually prevalent this season, especially in localities that suffered in the summer from drought. This is a characteristic of the parasite, the weather following the dry period, being moist, inducing soft young leaves upon which the spores germinate and enter with great rapidity, causing the spots and collapse. It also affects the flower buds, causing them to damp off or dry up. We have not found anything to act better than removing the worst affected leaves and burning them, then sprinkle dust charcoal freely over the plants and bed. The charcoal seems to dry the moisture and benefit the plants. We have also used a mixture of freshly burned chalk lime, ground to a powder, and flowers of sulphur in equal parts, dusting over the plants very lightly by means of a sulphur duster, or improvised article formed of an old worsted stocking. The disease appears to die out as the days get longer and the weather brightens. It is favoured by a dull and moist condition of the atmosphere, and especially by fogs.

Corrosive Sublimate Solution for Eelworm (F. W.).—Corrosive sublimate solution 1 oz. to 6½ gallons of water, is quite sufficient to kill eelworms, or any other micro-organism, if the infested plants are subjected to it for one and half hour. Flower-pots would be "disinfected" by one part of the poison to 300 parts water; but we do not advise it, as the pots will hold a considerable quantity of the solution, and would not be over-safe to handle. Why not scald the pots in a tub with boiling water? No eelworms will stand that, and while being quite safe would answer your purpose. Certainly half a pound nitrate of soda to 1 gallon of water will kill eelworms—we are not sure about eggs—in soil, not, of course, containing any growing plants. We found 2 ozs. to the gallon of water kill eelworms in soil, and even 1 oz. to the gallon, the former in about forty minutes and the latter in nearly four hours. Kainit, however, acts more promptly and effectively; but many preventives and remedies fail through their not being used thoroughly, so as to reach the eelworms. Besides, kainit is only about one-fourth the cost of nitrate of soda, and there need not be any difference in the amount supplied. Boiling water in actual contact with eelworms will kill them, and we suspect cook the eggs too. Our correspondent says, "Your readers may be glad to know that we find 'fostite' to be the best powder for mildew or rust on Chrysanthemums, or disease on Tomatoes. We distribute it with the 'Malbec' bellows, and its exceeding fineness makes it adhere well to foliage and prove economical in use." It has been advertised in our columns.

Deformed Mushrooms (H. C.).—The fine fleshy Mushrooms are infested by a fungus, *Icaria intricata*, but there are also traces of *I. citrina*. It affects the gills, where the reproductive organs are located, and destroying these parts, the Mushrooms cease growing and dry up. We have known the crops of Mushrooms rendered useless by the pest; generally, however, it affects them in patches here and there. In some seasons it proved very troublesome, and then would disappear for years. The best preventive of the disease spreading was found in keeping a sharp look-out, and promptly removing any Mushrooms that remained stationary and had mouldy gills, burning them. Possibly the disease occurs through the Mushrooms not having a due supply of chlorine, and benefit has resulted from the use of a little common salt in watering, 1 oz. to a gallon of water, not using it over the "buttons." The Mushrooms are not suitable for culinary use, being too dry, and probably not wholesome, but upon that point we have no experience, as we never troubled the cook with them—almost for certain rejection.

Climbers for Back Wall and Ends of Greenhouse (S. B. T.).—We presume the roof of the span with ends facing east and west is partly covered with climbers in the usual way—that is, a plant to each rafter—and the growths so disposed as to afford some light to the plants beneath, so that a considerable amount of light will fall on the back wall. Then the following will be suitable:—*Hibbertia dentata*, yellow; *Lapageria alba*, white; *L. rosea*, rose; *Lonicera semperflorens* minor, scarlet and yellow, sweet scented; *Plumbago capensis*, blue; and *Rhychospermum* (*Trachelospermum*) *jasminoides*, white, sweet scented. As the first named has unpleasantly scented flowers, to which some persons object, you may have *Proustia pyrifolia*, white, instead if considered advisable. If the back wall be very much shaded you will be best served by *Camellias*, which do splendidly and, notwithstanding the fashion against them just now, are the "queen" of the greenhouse in winter. For the ends *Jasminum azoricum*, white; *J. gracile* (*simplicifolium*) var. *De Poiteau*, white. The latter should be given the warm end of the house. If you want a yellow *J. odoratissimum* would be suitable.

Chrysanthemums for Christmas (W. B.).—Little's soluble phenyle can be procured from Messrs. Little & Son, Doncaster, who are the makers. In regard to a supply of good white Chrysanthemums at Christmas, the contributor to whom you appeal writes, "I can confidently state that there is really no great difficulty in securing them. In the Midlands the seasons are fully ten days later than in the South, so that by following the same general course of treatment such a variety as *Niveus*, which you state was over with you by the second week in December, would by a little attention to retarding, be in full beauty at Christmas in the Midlands. We had a good number of this variety in 48's, which were all sold in the pots, on December 24th. The cuttings were inserted during the first week of April, stopped when they were about 6 inches in height, and then allowed to grow at will. The mild autumn gave us the opportunity of leaving the plants in the open air till the third week in October; they were then placed in a late vinery, and received just enough fire heat to exclude frost and damp. Larger plants for supplying cut flowers were produced from cuttings inserted in January, and stopped as required till the second week in July. The whole of the flowers from these were cut during the last two weeks of December. *Princess Victoria* and *Lady Canning* naturally flower later than *Niveus*. By inserting cuttings of these at the present time we have no doubt they may be flowered during the last two weeks of December, and well into January anywhere in the South. We have plenty of both varieties whose flowers will not be fully expanded till a fortnight hence."

Apples, Pears, and Plums for Appearance (J. S.).—Your beautiful district, so far as we have seen, does not appear favourable for hardy fruits of the nature indicated, and this is, we apprehend, the reason of the generally high prices that we have observed in the shops. The atmosphere may be too humid for the maturation of the wood, and the trees cannot have the thorough winter's rest that is so good for them in the absence of anything like severe frost. We think you will find interest in variety, and noting the climatic effects on such as those we will name. In no other way can you find the special adaptability of certain varieties for the positions in which you desire the trees to flourish. We strongly advise that they be thinly trained, or the branches thinly disposed, and if there is a tendency to luxuriance in any or all of them, to dig up and replant biennially, or as the nature of the growth suggests, until a sturdy, fruitful habit is induced. The soil should be firm, but only making it so when in a moderately dry state, as any serious amount of compression when very wet is injurious. If it is deficient in calcareous matter, basic slag applied at the rate of ½ lb. or more per square yard of surface, and mixed in to the depth of a foot, would be likely to act beneficially. The following are worth trying: Apples for BUSHES—*Dessert*:—September Beauty, Lady Sudeley, Worcester Pearmain. *Dessert or culinary*:—Duchess of Oldenburg, Cardinal, Cox's Pomona, Gascoyne's Seedling. *Culinary*:—Cellini, Yorkshire Beauty, Golden Noble, Emperor Alexander, The Queen. Apples for WALL CORDONS—*Dessert*:—Red Astrachan, American Mother, Allington Pippin, Cox's Orange Pippin, Scarlet Nonpareil. *Dessert or culinary*:—Washington, Wealthy, Buckingham, Lewis's Incomparable, King of Tomkin's County. *Culinary*:—Bismarck, Beauty of Kent, Brabant Bellefleur, Warner's King. PEARS for bushes:—Beacon, Madame Treyve, Emile d'Heyst, Beurré Clairgeau. Pears for cordons against wall: Souvenir du Congrès, Louise Bonne of Jersey, Durondeau, Doyenné du Comice, and Pittmaston Duchess. PLUMS for bushes:—Belgian Purple, Victoria, Prince Engelbert, Washington, Monarch. Plums for cordons against walls:—Denniston's Superb, De Montfort, Early Transparent Gage, Jefferson, Kirke's and Coe's Golden Drop.

Bullfinches (R. A. C.).—Your letter has been forwarded to Mr. J. Hiam, though as he is much from home anything like a prompt reply may be impracticable.

Tomatoes (A. Geary).—Where several varieties of Tomatoes are grown, it is difficult to keep the stocks true, and this may account for the variation in your case. The fruits also are, to some extent, influenced by methods of culture, some growers producing all varieties of larger size than do others. Our correspondent "H. D.," who is a successful grower, found Sutton's Eclipse to produce ideal fruits for market—medium sized, smooth and round—and if it succeed as well this year as it did last season, he will be likely to grow it still more extensively.

Destroying Black Ants (J. S.).—As you have tried to exterminate them "with bones," not sufficiently persevered in to effect the object, and "also used sugar mixed with calomel," which is best used in spring, you may find the following preparation useful; but it must be employed with the utmost caution, as it is a poison fatal to animal life. Recipe: 1 oz. of ordinary or white arsenic and $\frac{1}{2}$ lb. of Demerara sugar. Place the arsenic in an old iron pot with a quart of rain water, and then boil over a gentle fire until reduced to a pint or a little more of liquid. Add the sugar and mix well. The "syrup" can be dropped about the runs and haunts of the ants, or it may be placed in saucers near their nests. The ants will gradually disappear, some time being necessary to effect a clearance.

Scale on Apple Tree Bark (Young Grower).—No, the scale is not *Aspidiotus* or *Diaspis ostreiformis*, but *Mytilaspis pomorum*, commonly called Apple mussel scale. Yes, petroleum "burns the bark" in some cases, and "if it is diluted it does not kill the scale." The best means of destroying the pest is the old-fashioned potash and soda lye, which dates back to the time of Herodotus, and now used in the handy form termed Coate's solution of caustic soda and commercial potash. For your purpose 1 oz. each of those substances may be dissolved separately or each in half a gallon of boiling water, then adding the two solutions together and mixing: apply with a clean half-worn paint brush when cooled to 130°. It suffices to wet every part of the bark thoroughly, but not lavishly, so as to run down and cause injury by an over-application. Take care not to exceed the strength—1 oz. each to a gallon of water. The trees should be dry and quite dormant when dressed.

Currant Bud Mite (T. D.).—The shoots are badly infested by the Currant bud mite (*Phytoptis ribis*). If all the buds on your bushes are swollen we are sorry to say they cannot possibly be restored to their original condition by the application of anything whatever, because nothing can reach the mites inside the buds. The bushes must either be dug up and burned, or cut down and the tops burned, following in the latter case with a very heavy dressing of lime. We once cut some down, the branches in this case springing from beneath the soil, and spread a thickness of half an inch of lime or more on the stumps and soil. We scarcely expected to see any further growth from the stumps; they, however, pushed freely, and in two years produced abundance of fruit, and not a swollen bud was subsequently seen on the bushes. Had they been on clean stems a foot or so above the soil the results might have been different, and we know that some cultivators have not found the cutting down and liming to banish the enemy. When attacks are comparatively slight, some cultivators syringe their bushes when dormant with a mixture of sulphur and lime, to render them distasteful to the mites, and then watch for and pick off every swollen bud in the spring, burning the buds removed, and in this way decimate the pest. Burn at once all seriously infested branches, also the buds from those less infested, in case there are sufficient unattacked buds for affording some fruit. Do not propagate from the bushes, but obtain young trees from an undoubtedly clean stock, and plant as far distant from the infested bushes as possible. This is more important than some growers appear to realise, as the mites have undoubtedly means of locomotion, which they requisition to travel from one plant to another, and even very much greater distances than that. Swollen buds and the destructive mite have more than once been illustrated in the *Journal of Horticulture*.

Peach and Nectarine Trees Casting Buds (F. J. B.).—The buds are not "deaf"—that is, without central formations corresponding to the flowers, though some of them are defective, and appear to have been dead a considerable time. We have grown Peaches and Nectarines in lean-to houses facing south-east and south-west, and have found the trees were less prone to bud-casting than in structures with a due south aspect. The bud-dropping appears due to over, rather than under ripening, as they seldom fall from outdoor trees on walls, unless pinched for water in the growing season. Are the trees in too light and loose soil, subject to changeableness of moisture and consequent check on the buds at times during their formation? This experienced gardeners consider the chief cause of Peach and Nectarine trees casting their buds, and it is consonant with our experience. We have had the greatest success with the trees in sound firm soil to which has been applied a mixture of superphosphate five parts, sulphate of potash two parts, and sulphate of magnesia one part, using 4 ozs. persquareyard during the resting season, and pointing in lightly. The best of all preventives of bud-casting we have found has been lifting the trees carefully, laying the roots in fresh compost near the surface, and making quite firm, so as to promote stout wood and a vigorous root-formation. Then the soil will be more retentive of water supplied and of the available nutrients, and under good management the trees retain the buds and produce fine fruit. The buds sent appear to have been coated with some substance, but of this you make no mention, and it may, or may not, have been injurious. See remarks on lifting Peach trees, by Mr. Backhouse, on page 33.

Various Plants (J. C. S.).—*Eurycles Cunninghami*, or Brisbane Lily, has white flowers, grows about a foot high, and requires a warm greenhouse. It is a handsome bulbous plant, and requires water withheld for a few weeks after growth is completed, so that the bulbs may ripen and rest. *Sandersenia aurantiaca* is a pretty, tuberous-rooted, erect-growing herb, with simple leafy stems, and a native of Natal. It requires an open soil composed of loam and peat in about equal proportions, affording good drainage. The bulbs should be started, after careful repotting, in February, in a temperature of about 70°. Warmth and moisture are necessary in summer, but as the growth ripens, water should be gradually withheld. During winter the soil must be kept quite dry, and the pots laid on their sides in a warm greenhouse. Exposure to cold when at rest is a point specially to be avoided. It is a liliaceous plant allied to *Gloriosa*. *Zephyranthes carinata* (fig. 8) is a greenhouse or half-hardy bulbous plant



FIG. 8.—ZEPHYRANTHES CARINATA.

from Mexico. The flower scape grows about 1 foot high, the flowers have a green perianth tube, and the segments are pink and about 2 inches long. The plant grows and flowers in summer, and rests in the winter. It should be grown on a sunny shelf in the greenhouse. Compost turfy loam, with a leaf mould or well decayed manure and a free admixture of sand, repotting about every two years. *Ada aurantiaca* has orange scarlet flowers, in a long terminal raceme. It requires to be potted in peat and sphagnum in equal parts. The drainage must be perfect, and during summer the water supply profuse. Although in winter far less will suffice, yet the plant should not be allowed to become too dry; indeed, it must never be entirely rested. It is a pretty species, and lasts a considerable time in beauty; but though easily grown does not always flower freely, probably from being kept too sparingly watered when making growth, the pseudo-bulbs not acquiring sufficient strength. It requires to be grown at the warm end of a Cattleya house or a cosy corner in a warm greenhouse. With strong pseudo-bulbs the flowering is not difficult, and the time being winter and spring renders it desirable in collections. It is one of the easiest grown of Orchids when a suitable position is found for the plant.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (T. R. B.).*—Your specimen more closely resembles a finely grown fruit of Galloway Pippin than any other variety which we know. (D. W.).—1, Annie Elizabeth; 2, Spencer's Favourite; 3, Yorkshire Greening; 4, Wadhurst Pippin; 5, too shrivelled to permit of positive identification; 6, Langton Nonesuch. (A. B. C.).—1, New Northern Greening; 2, Golden Winter Pearmain; 3, Wormsley Pippin.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Journeyman).—All forms of Cyrtopodium insigne, and not one of them is of special merit, though all are useful for home decoration. (L. W.).—1, Dieffenbachia picta; 2, Croton angustifolius. (S. S.).—1, Oncidium tigrinum; 2, Lælia anceps; 3, Cymbidium Lowianum. (D. C. B.).—1, Tradescantia zebrina; 2, Adiantum cuneatum grandiceps. (W. T.).—The Zonal Pelargoniums can only be named by comparison in a large collection.

TRADE CATALOGUES RECEIVED.

W. Bull, Chelsea.—*Seeds.*
G. Bunyard & Co., Maidstone.—*Seeds.*
H. Cannell & Son, Swanley.—*Chrysanthemums and Seeds.*
Carter, Page & Co., London Wall.—*Seeds and Plants.*
W. Clibran & Son, Altrincham.—*Seeds.*
W. Cutbush & Son, Highgate.—*Seeds.*
E. P. Dixon & Sons, Hull.—*Seeds.*
Dobbie & Co., Rothesay.—*Seeds.*
Fidler & Sons, Reading.—*Seeds.*
Kelway & Son, Langport.—*Wholesale Seed List.*
T. Methven & Sons, 15, Princes Street, Edinburgh.—*Seeds.*
C. Sharpe & Co., Sleaford.—*Seeds.*
C. Turner, Slough.—*Seeds.*
R. Veitch & Son, Exeter.—*Seeds.*
Vilmorin, Andrieux, & Co., Paris.—*Novelties.*
T. S. Ware, Ltd, Tottenham.—*Seeds and Plants.*

COVENT GARDEN MARKET.—JAN. 11TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	1	3 to 3 6	Lemons, case	30	0 to 60 0
Cobs	40	0 45 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb.	0	10 1 6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0	0 to 0 0	Mustard and Cress, punnet	0	2 to 0 4
Beans, $\frac{1}{2}$ sieve	0	0 0	Onions, bushel	3	6 4 0
Beet, Red, doz.	1	0 0 0	Parsley, doz. bnchs.	2	0 3 0
Carrots, bunch	0	3 0 4	Parsnips, doz.	1	0 0 0
Cauliflowers, doz.	2	0 3 0	Potatoes, cwt.	2	0 4 0
Celery, bundle	1	0 0 0	Salsafy, bundle	1	0 0 0
Coleworts, doz. bnchs.	2	0 4 0	Scorzonera, bundle	1	6 0 0
Cucumbers	0	4 0 8	Seakale, basket	1	6 1 0
Endive, doz.	1	3 1 6	Shallots, lb.	0	3 0 0
Herbs, bunch	0	3 0 0	Spinach, pad	0	0 0 0
Leeks, bunch	0	2 0 0	Sprouts, $\frac{1}{2}$ sieve	1	6 1 9
Lettuce, doz.	1	3 0 0	Tomatoes, lb.	0	4 0 9
Mushrooms, lb.	0	6 0 8	Turnips, bunch	0	3 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz.	6	0 to 36 0	Ficus elastica, each	1	0 to 7 0
Aspidistra, doz.	18	0 36 0	Foliage plants, var., each	1	0 5 0
Aspidistra, specimen	5	0 10 6	Lilium Harrisii, doz.	24	0 36 0
Crotons, doz.	18	0 24 0	Lycopodiums, doz.	3	0 4 0
Dracæna, var., doz.	12	0 30 0	Marguerite Daisy, doz.	9	0 12 0
Dracæna viridis, doz.	9	0 18 0	Myrtles, doz.	6	0 9 0
Erica various, doz.	9	0 24 0	Palms, in var., each	1	0 15 0
Euonymus, var., doz.	6	0 18 0	„ specimens	21	0 63 0
Evergreens, var., doz.	4	0 18 0	Pelargoniums, scarlet, doz.	8	0 12 0
Ferns, var., doz.	4	0 18 0	Solanums, doz.	6	0 12 0
„ small, 100	4	0 8 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums	6	0 to 8 0	Lilac, bunch	5	0 to 6 0
Asparagus, Fern, bunch	2	0 2 6	Lily of the Valley, 12 sprays	0	6 1 3
Azalea, white, 12 sprays	0	9 1 0	Marguerites, doz. bnchs.	6	0 8 0
Bouvardias, bunch	0	4 0 6	Maidenhair Fern, doz.		
Carnations, 12 blooms	1	6 2 0	bnchs.	6	0 8 0
Chrysanthemums, per bch.	0	6 2 0	Narcissus, doz. bnchs.	5	0 6 0
„ specimen			Orchids, var., doz. blooms	1	6 9 0
„ blooms, per doz.	4	0 6 0	Pelargoniums, doz. bnchs.	6	0 10 0
Daffodils, single yellow,			Poinsettias, doz. blooms	12	0 15 0
bch. 12 blooms	1	6 0 0	Roses (indoor), doz.	2	0 4 0
Eucharis, doz.	4	0 6 0	„ Red, doz.	6	0 8 0
Gardenias, doz.	2	0 3 0	„ Tea, white, doz.	3	0 4 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	2	0 3 0
bnchs.	8	0 12 0	„ Safrano (English) doz.	2	0 2 6
Hyacinths, Roman, bunch	0	6 0 8	„ Pink, doz.	5	0 6 0
Lilium lancifolium, white	3	0 4 0	Smilax, bunch	2	6 3 0
„ pink	3	0 4 0	Violets	1	0 2 6
„ longiflorum, 12 blooms	8	0 10 0	„ Parme, bunch	4	0 6 0



A SHORT REVIEW OF 1893.

We do not like to write these words, they sadden us. With us more years can now be written off as gone than we can possibly hope to see again. They go so fast now. We write of winter, and lo! we have spring. We tell of summer flowers, and they fade before our ink is dry. We do not get through half we plan during the long days of sunshine, and the longer winter evenings still leave us with uncompleted work on our hands.

From many points of view this last year has been an extraordinary one—especially as regards cold. We have always been led to expect a certain amount of cold weather; we mean really cold—good old fashioned frost and snow, and we hope for it. Much as some of us dread wintery weather, there is a real necessity for it. Weather can do what man with all his machinery cannot. We rejoice to see the ice-bound roads—we rejoice to see the frozen clots—we smile at the abundant mantle of snow, for we feel these are powers silently at work on our behalf.

But last year there was nothing of this to record. Two or three sharp days in the middle of December made our 1898 winter. Day after day passed mild even balmy, with little or no rainfall, and excess of sunshine. We think (but have no written records to go upon) that this last has been an unusually windy year. From every quarter the wind came, and paid lengthy visits. If we had no winter we had some coldish summer days—days when we were glad to sit over a fire. We would rather the cold came in short days, when at least the shutters can be put up early and the cheerful fire and lamp impart a ruddy glow on our surroundings.

It does not seem quite the thing to sit over the fire when the Roses are ready to bloom, and the young Gooseberries cry out for a gatherer, but so it has been. We did get hot weather and plenty of it, when we began to wonder if old England had not made a trip to the tropics, and when the great heat had gone, a genial warmth followed us up right on to Christmas week, just to be broken by a sharp frost of short duration.

To judge of this last year properly, we ought to go back to the autumn of 1897. A wonderfully fine growing season it was, and consequently we began 1898 with plenty of herbage in the fields, and a grand root crop. An abundant winter supply means great ease of mind to the farmer. The difficulty in spring was to get rid of the roots in time to sow Barley, and good sound Swedes were to be begged on every side. We do not say we had too many Mangolds over, that we cannot have as long as there are yards full of pigs, but we almost fancy this time a few got wasted. Potatoes, too, of good varieties, made a wonderful finish, and put some good money into deserving pockets. There was also a short "boom" in Wheat, but alas! few of us had any left in store, and the prices fell and fell.

Such a haytime as we have to record! Plentiful rains gave grass a good push in the spring, and the crops were magnificent, and got in such excellent order. Hardly a bit of "old cow" hay anywhere; all fit for fast galloping horses of the Shires. There has been a general complaint respecting the scarcity of labour, and many farmers have had a real difficulty to face. During hay time, in one village we wot of, the mother of a duchess was undertaking the horse raking, and every servant and member of the household were pressed into the service of securing the dried grass.

A dry season suits the Wheat crop, which had an excellent start the previous autumn, and got away finely. In some low-lying districts we heard much complaint of laid crops, but taking the country as a whole we must write the Wheat crop as a success. The weather was too dry for the best Barleys, many of which were thin and rather flinty; but the Oat crop did well. We have heard of record yields; and not only is the corn so abundant, but the straw, being well ripened and healthy, makes the most excellent of fodder.

In the southern and eastern counties the long drought had a most disastrous effect on the Turnip crops, but further north the farmer has nothing of which to complain. "Smothered with fly," was the cry, and a very serious business it was. We heard of whole—and many of them—fields from which the sheep turned away loathing. Where this was the case it was also found that the pastures were perfectly bare, and the poor farmer was fairly at his wits' end to find suitable, or indeed any, keep for his flocks; and this just at a most critical period, when lambs are too apt to go altogether wrong, and when the ewe flock needs a stimulating diet. Happy were those men who had some low-lying land with a good Rape crop, or those whose Cabbage patch was what it should be.

The drought also proved a serious impediment to autumn ploughing. The ground was like iron, and resisted the iron of the ploughshare, and it required a good deal of rain to make the land at all workable. This was in startling contrast to many autumns we have known, when all work was delayed by unwearying rain. The question is, Which kind of season is most injurious? and it is a question which is not easy to answer. Many of us were in serious difficulties re our water supply; but at the same time we were with thankfulness reviewing the excellent season we had for storing roots and pieing Potatoes.

Ah! well, there always will be two sides to every question, and we should not be British agriculturists if we could not get in a small grumble somewhere. Taking the year as a whole, our crops of corn, roots, hay, and Clover have been good, and were prices a little better we should think there was a return of the prosperity of thirty years ago.

This has been a disappointing year to the large Midland grazier, and indeed to all those whose occupation is to provide the butcher with matured meat—foreign competition! Store stock has been much dearer in proportion than fat. This is quite the wrong way about, and what profit can there be for the grower of prime Christmas beef when he only realises 7s. per stone. Think of all the cake, the dried foods, the hay and Clover that have to be consumed to make even one stone of good beef. We have long failed to see how the thing was done. It is like conjuring, and the secret is hidden in the breast of the owner. Best mutton, too, at 8s. per lb. does not mean anything

very grand, though we think pork at 6s. per stone would be cheaper "ficed" for a family.

The dearest class of stock just now is a good cow in full milk, and a really good cow commands an excellent price. For the winter season calves are dear, quite making £2 at a week old. We do not mean a wretched little Jersey or any fancy breed, but a good large variety, such as a Shorthorn Hereford, or the like. We have always advocated rearing calves instead of buying in casuals from any market or fair. There is less liability of imported disease, and a well fed calf never gets stunted or thrown back in its growth, and in early maturity is the only chance of making any profit at all.

WORK ON THE HOME FARM.

Frost, snow, sunshine and rain on one and the same day, give us variety and change enough in all conscience; but a good deal of moisture has fallen, and notwithstanding the fact that some low-lying lands have floodwater on them, the water is very welcome with a view to next summer's supply.

A really thorough frost we are apparently not to have, and we want one badly; much muck is ready for removal, but the surface of the land is too soft to cart on, and though the roads are much improved on what they were a few years ago, manure-leading would soon make bad work with them in their present soft condition. Meanwhile we keep the ploughs at work, otherwise the horses would have to stand in the stable.

The Potato trade lately has been very stagnant, and few are being removed from our district; but we hear of others being almost denuded of them, so perhaps the consumption may have been heavy; a sharp frost would help to clear the markets and brighten up the trade.

Farmers complain much of the poor prices made of Christmas beef, and no wonder, when we hear a large butcher owning up that his beasts bought at the Christmas markets, forty in number, only cost him 5½d. per pound. There must have been a great profit for somebody, for little beef is sold under 6d., all the best cuts for 9d., and there is all the offal besides, which at one time would have easily realised £5 per head.

Wheats are growing fast, but the larks are still paying attention to the later sown plots. We have seen some green shoots 3 inches long lying on the surface, having been uprooted quite lately. We see a neighbour carting salt from the station, which reminds us that soon will come the time for sowing it on the young Wheat. Farmers do not use salt so much as they once did; the price of Wheat no doubt has something to do with it. But the raising of prices by the Salt Syndicate caused many farmers to give up using salt, and few of them have recommenced.

The voice of the chicken is heard in the incubator the nineteenth day. This evidently intends to be an early bird.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

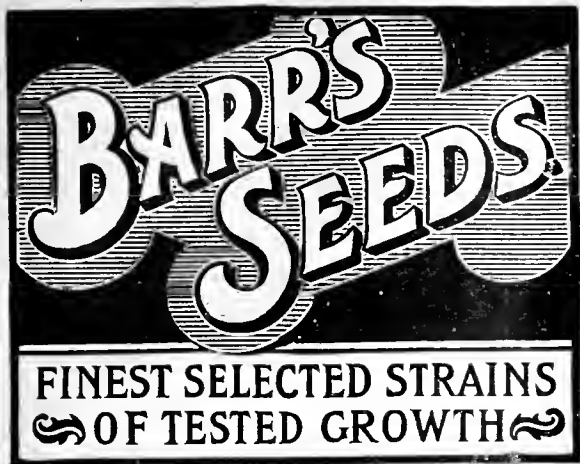
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. January.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	1	29.298	34.3	34.2	S.W.	41.0	41.9	32.8	43.7	28.7	0.086
Monday	2	28.901	37.0	36.3	W.	40.1	41.9	33.8	53.6	28.9	0.089
Tuesday	3	29.738	39.2	37.7	N.W.	40.1	47.9	35.9	58.8	32.9	0.024
Wednesday	4	30.013	47.2	47.1	W.	40.9	52.9	39.7	62.6	35.6	—
Thursday	5	30.324	37.2	37.2	N.W.	42.3	44.2	35.1	51.9	28.2	—
Friday	6	30.308	39.1	38.4	E.	40.3	45.9	30.4	47.6	25.6	0.010
Saturday	7	29.891	45.2	44.1	S.W.	41.3	50.3	40.2	53.8	37.9	0.012
		29.782	39.9	39.3		40.9	46.4	35.4	53.1	31.1	0.221

REMARKS.

- 1st.—Foggy morning; rain from 4 to 6 P.M.; clear night.
- 2nd.—Overcast early; rainy from 8.30 to 11 A.M.; bright sun from 11.30 to sunset; showers from 5 P.M., and gale at night.
- 3rd.—Gale in small hours; fine day, frequently sunny, and bright sun from 11 to noon.
- 4th.—Rain till 1 A.M., then dull and humid; sunny from 10 till noon, and occasionally after; spots of rain in evening.
- 5th.—Slight fog early; sunny almost throughout the day.
- 6th.—Overcast, with occasional slight drizzle.
- 7th.—Overcast, with spots of rain early; sunny from 10 to noon; overcast again after.

A damp week, temperature high, but not remarkably so.—G. J. SYMONS.



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| 1 Pint Scarlet Runner | 2 " Leek |
| 1 Packet Asparagus | 3 " Cabbage Lettuce |
| 2 Pkts. Beet | 2 " Cos Lettuce |
| 2 " Borecole | 2 " Melon |
| 3 " Broccoli | 6 ozs. Mustard |
| 2 " Brussels Sprouts | 4 " Onion |
| 3 " Cabbage | 2 Pkts. Parsley |
| 1 " Capsicum | 2 ozs. Parsnip |
| 4 ozs. Carrot | 4 " Radish |
| 2 Pkts. Cauliflower | 1 Packet Salsify |
| 2 " Celery | 2 Pkts. Savoy Cabbage |
| 1 " Couve Tronchuda | 2 " Scorzoner |
| 4 ozs. Cress | 6 ozs. Spinach |
| 3 Pkts. Cucumber | 6 Pkts. Herbs |
| 2 " Egg Plant | 2 " Tomato |
| | 4 ozs. Turnip |
| | 1 Packet Vegetable Marrow |

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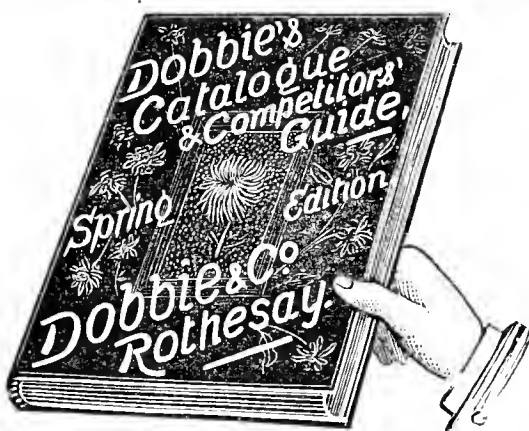
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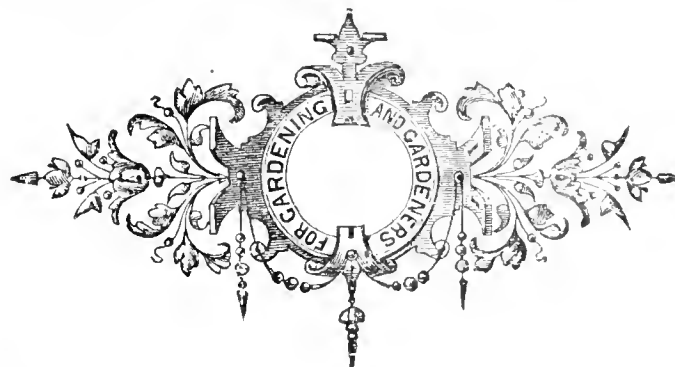
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THURSDAY, JANUARY 19, 1899.

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A LOST CHORD.

FENN AND FUNGUS.

I, on page 490, I read "An Old Provincial" right, between his lines, he seems to miss the lively "humour" that shined and sparkled through our olden time compositions in the *Cottage Gardener*. I should find it difficult to harp on the same string over and over again, with fine phrases, long drawn out in correct calligraphic flourish, which distinguish for the most part the gardening columns of the *Journal of Horticulture*. No "eminent editor" would pat me on the back for an elegant flow of rhythm; nor, lacking the rest, would it help me to carry out experiments towards keeping a "pot a-boiling" for the future.

"An Old Provincial" has, however, resuscitated for me a conversation that happened in Piccadilly with my good old friend Donald Beaton, a short time before his death, in regard to "humour." Beaton—we thought him recovered, or nearly so, from a sad affliction—was wending his way from Chiswick Gardens, where he had attended a meeting of the R.H.S. Committee. I saw he appeared agitated and perturbed, and inquired of him what had happened. "They have been telling me my writings are all chaff." "Oh," I answered, "is that all; come and have some refreshment with me (we were just opposite the then Wellington dining-rooms, where I was bound for); it is only their way of talking, and, after all, where can you fail to find a modicum of chaff in a good sample of wheat?" He smiled, but my gloss scarcely satisfied him. He did not enter the restaurant, for he said he had not long before partaken of (the then) R.H.S. hospitality. Poor Donald! I never saw him again, for he was not long afterwards interred in Kingston Churchyard, to rest, to sleep, and be out of it all.

He was endowed with rare "humour," was Donald, and had expressed chagrin to me before because of the editors striking out his choice bits—of course wrongfully. Alas! too, for my phenomenal self! However, in the midst of fighting he hanged to writing. I want to describe for you now a tussle I have had amongst the "Mums."

No. 2625.—VOL. C., OLD SERIES.

Three years ago you, Mr. Editor, came to see me along with another young man who has since visited the Midnight Sun, and lately been footing it in the United States of America, and for all that I know he will circumambulate the globe before returning to us. You may remember how he felt surprised at the abundance of foliage I allowed on my Tomatoes, and made a start to lop away a portion of it at once. "Not so, on any account," I struck in; "it is the pride of my life to maintain it so in all its integrity, as well also as you can see upon the Potatoes and other things; thanks to Tait, Buchanan, and Peter Barr's anti-blight powder." I did not then say that I was touring about my district some few weeks before preparing a report of the fruit crops, that I noticed something uncanny in a few places upon the foliage of Chrysanthemums. I was not a grower of the flower.

When I erected my Potato seedling house here I enlarged it to become dignified to a "greenhouse," and caused three iron pillars to be placed to support the extended glass roof. To furnish these I sowed to run up them and look pretty Nasturtiums mixed with Canariensis. But the stricken foliage I had observed upon Chrysanthemums caused a premonitory feeling with me that we should hear of it much farther afield. Anticipating, I begged a few cuttings from a neighbour whose plants were suffering. I would plant them against the pillars for a change, and for a purpose, to test what effect the anti-blight powder might have upon their foliage to prevent it from becoming diseased. Those who have cared to read my experiments with it in these pages, or those of my visitors who have published their observations, and learnt our good opinions of its qualities in preserving leafage, while annihilating fungoids and immatured insect life, will be in a measure prepared for what I am going to say.

Well, to secure the desirable effects, the anti-blight powder should, in a glass house, be applied early in January onwards, and fairly continuously through the succeeding months, in dry impalpable condition, by the agency of a Malbec bellows. It is then and thus the benefit is secured. The powder will not injure the tenderest foliage or the most delicate flower if not applied too bountifully; on the contrary, infantile shoots thrive under it, and for those of older growth the leaves soon become robust in their greenery without any syringings with water, at least, they do so with me in my Potat—I beg its pardon, my greenhouse, where I grow Grapes, Figs, Tomatoes, seedling Potatoes in their first stages, herbaceous plants, and now Chrysanthemums. I have also lately had under the glass, from the outside, Roses and Honeysuckles, to prove what effect the powder may have upon those implacable harbourers of aphids, mildew, and red spider, under cover.

This *multum in parvo* house has only the ground for a floor, which of necessity must be watered, otherwise I have purposely desisted from syringing the wall, the wood and glass work, the Vines, or any foliage in the structures, during a period of five years. As a rule, I think too many splashings about under glass unnecessary—a mere rule of thumb. I wish I could prevail upon my good old chum, "A. D." to draw out of that Bourdeaux-Bordelai rut for drier compost. With his greater suasion his friends would soon learn to bless him. To return: I applied the powder as above to the Chrysanthemums; they retained their foliage intact, feathered completely down to the ground, and flowered beautifully.

This behaviour of them against the pillars urged me to procure cuttings from a distance in greater variety, to be grown in pots. As soon as they were placed they were made to undergo the bellows' pepperings, and so on through their rooting stage and other two shifts or pottings, and outside-sentry-go, as is usual. I ought, though, to mention the soil's nature that I grow them in. It is procured from off my garden experimental Potato plot, a fairly good loam, from a site whereon was burned a heap of collected debris—tree prunings and other combustible matter. This is cooled by distribution with a rake during the charring process, to secure the potash, by preventing the sticks of wood as charcoal wasting away to grey ashes. Whilst it is quite hot about 2 inches of the surface soil is shovelled up to become stored away, and afterward mixed with the cooled sprigs of

charcoal, thus making sure that all there was of living insect life is dead, and we get a lasting easy compost, in which we do not hesitate to grow most things. Results: I pin my faith to the mystic number three. I believe I have never given any of my experiments off for these pages under a three years' probation. This three years' trial obstructive of "rust" deposit on Chrysanthemums gives me hope that the same agreeable circumstances may happen for others, should they feel inclined to work after the manner I have pointed out.

I have read many queries and remarks in contemporaries: Your own in issue November 3rd, 1898, page 343; Mr. G. Abbey's intensely absorbing scientific researches, December 13th, pages 284-5; and, with great pleasure, Mr. Massee's, on page 286-7 of the same issue of the *Journal of Horticulture*. Mr. Massee's remarks are more accordant with my homely researches than anything I have previously met with; they mostly agree with what I have observed and written about for the last six years or so in regard to my Potato disease spores, which float or become dispersed, imperceptibly to the naked eye, in warm weather and bright sunshine, to rest, if they can, upon the surfaces of congenial foliage. But where these are powdered over with the anti-blight the microbes, or whatever the scientists properly call them, cannot meet with this destination otherwise than by the penalty of instant death; *per contra*, they would insinuate between the cuticles into the pabulum, to quickly mature, and from the under sides cast their spores on to the surfaces of the leaves below to become their prey, or to be dispersed by the air or some sportive syringe in their billions round.

I must not dwell much longer on the subject or I fear you to say that I am "swamping" you. I will beg room for another paragraph *à propos* to our important and indispensable autumn flower. My friend in Gloucestershire who sent me cuttings had his wife up to place his flowers at the Reading Chrysanthemum Show, whilst he was further afield, for those of Oxford and Banbury. He takes prizes wherever he goes. Feeling interested, his wife came to see my "missus," and the "Mums." She expressed herself delighted, and surprised at their perfect healthiness, as she said she had been obliged to spend nearly all her time in sponging the "rust" from the leaves of the very plants propagated from those from which mine were taken. To clinch this nail, so far as I have driven it, a young gentleman who was staying with our rector having a camera with him, kindly came and "took" the enclosed photo, about the middle of November. It takes in about two-thirds in length of the plants in the greenhouse, but sufficient for you to see the representation of redundant foliage which "feathered" from the surface of the pots upwards. The iron pillars I have pointed out by marks, to show how those plants maintained their *last year's foliage* intact, quite to the ground, as I did not cut them down.

Again—for one moment—I seem to recognise the facile hand of an "Old Provincial" as that of an old contributor (is it Pownall's?), but of course our Editor never divulges incognitos. The paper impresses one how quickly flows a "record" of life in achievements towards old age, and has caused me to write this article for the pages where I introduced myself in 1850. I had not long then—viz., when I wrote, struck thirty-two years of age; I was over head and ears struggling with the 'taties and other problems. I was tolerably well grounded in horticulture, and very soon after my first epistle came a letter from Mr. Johnson, the first genial Editor and founder of this paper requesting me to write some articles, and to send him a specimen. I did, but nervously tried to back away. Another letter to say that "he who could write the paper I had sent could write anything he wanted to bend the printers' backs with, and I was to set about it at once." Thus I became fairly hooked, and ever since I have annually, more or less according to what I have completed, "bent the printers' backs" for these pages, in the City of London, by explaining away some "new thing" anent improvement for the cultivation of our native soil, and in publishing the experiments I have carried out for the betterment of our food, or the beautifying of God's fair earth. But . . . Lord

Nelson said what England expected, and One greater than he asked of old, "What is required of thee, O man?"—ROBT. FENN, *Sulhampstead, near Reading.*

[In recognition of the long connection of our octogenarian contributor with the *Journal of Horticulture*, yclept in its youthful days the *Cottage Gardener*, and of his services to horticulture, especially as the pioneer in the improvement of the Potato by the art of cross-fertilisation, we assign this his latest, but we hope not the last, of his "compositions" the prominent position to which, all things considered, we think it is entitled. As we like to afford a momentary pleasure to the verdant old evergreen, with his good heart, clear head, and busy hand, we have prepared one or two of those "long drawn-out sentences" of the present day for his special delectation, in the hope that he will enjoy them, even if the style is such that ought not to be followed, but eschewed, and this being so it shall be changed forthwith.

The photograph received cannot be reproduced. For this we are sorry. The light at the moment did not permit of the characteristic features of the plants being brought out with sufficient distinctness for clear transference. All the same, the original shows a dense mass of luxuriant foliage from the ground to the roof of the house, and a fine setting for the emergent blooms. The remarkable point, however, to be noted is that the bold leaves hanging over the pots were produced in 1897. Though in perfect health when photographed, they were a year and nine months old. This fact at once affords conclusive evidence of the best cultural attention, and of the complete mastery obtained over the destructive rust fungus.

It is important to remember that the "rust" was prevented, not destroyed. Over and over again we have advised the same action that Mr. Fenn has taken with such gratifying success. We have before stated, and state once more, that we have seen Roses, Vines, Honeysuckles, and other plants virulently infested with mildew at Sulhampstead, also Potatoes, reeking with disease; then on subsequent visits found nothing but greenness, cleanness, and health, except in the case of half rows of Potatoes left untreated.

In the combat between Fungus and Fenn the former had to succumb to the early and systematic measures resorted to, as described, for preventing the enemy taking possession of the plants. This is the safe and sure course for mastering insidious fungoid pests. We wish still much longer life to the victor, and thank him for showing the way, also for affording conclusive evidence of his success in combating fungoid foes. The sub-title of the above heading is ours.]

LONDON GARDENS OVER FIFTY YEARS.

No. 2.

THE memorable year that witnessed the uprising of this Journal and of some other periodicals I need not name, which have largely benefited the world, was, by way of contrast, marked politically by the downfall or dislodgement of many organisations which people thought likely to endure for aye. It is imperfectly represented by pictorial designs, so those who never saw it can form but a poor idea of the London of 1848, as it appears in the recollection of old stagers like myself. One change that strikes us particularly is that there seemed to be, fifty years since, a well defined boundary between the town and its suburbs, now these have been absorbed into the metropolis.

Again, we think how all the metropolitan suburban lines that carry yearly their millions of passengers on pleasure and business bent have seized upon land that was formerly fields or gardens, and such facilities for travelling by train, and by tram also, have brought up in every direction crops of houses where all was open ground surrounding villages, in the early Victorian period. Yet, even in the reign of George III. citizens had begun to migrate to the suburbs, for Cowper mentions the villas which, like an Indian's belt, encompassed London, and he regards them as an indication, not merely of a love for fresh air, but of a desire to possess a garden. Certainly no small number of these mansions, with extensive gardens and shrubberies, of which Clapham and Kensington gave examples, occupied by well-to-do lovers of flowers and fruit, did much for the promotion of horticulture. They have vanished, but the impress of their work abides.

Great indeed has been the revolution in domestic gardening during the last half century. The change is marked not only by the increased number of ornamental plants cultivated, but by the improvement of methods. One cannot help admiring the patience and hopefulness with which people watched over the plants of city gardens, expecting them to thrive in the ordinary soil of London, unaided by natural or artificial manure. The poet just mentioned, referring to the London gardens he had seen, and which were often so airless that he calls them "wells," names Nightshade and Valerian amongst the plants that

were doomed to a city life. I never saw any Nightshade species growing in an old London garden, appropriate though it might be to the gloom of the metropolis, except *Solanum nigrum* as a weed. But I will not say it is unlikely. Some may have had the Woody Nightshade on a garden fence, for the plant used to thrive in hedges just outside London. About the Valerian, no doubt people did cultivate *V. hortensis* and *pyrenaica*, with their respective flowers of red and white, hardy perennials, which required no particular care. There was no telling, however, what plants you might come upon growing amid smoky surroundings. We remember a scene in "Martin Chuzzlewit," where Dickens pictures the dingy room of Mr. Mould, the undertaker. One thing remarkable was that the Scarlet Runners of the small garden, lit up by stray gleams of sunshine, sent in through the window a strange lurid light.

The same author, doubtless from personal observation, has also depicted gardens, then not unusually found attached to a London house, where the inmates had no time or taste for floriculture. We may discover one like it yet, with its solitary tree, two or three perhaps, which put forth leaves feebly in autumn, he says, when other trees shed theirs, and linger on year after year, crackled and smoke-dried. The ground around these is like a piece of unreclaimed land, strewn with tins, crockery, hampers, and rubbish. Possibly a few remnants of Box indicate that an attempt had once been made at a border, and some stunted "everbrowns" are scattered about, while even weeds seem to shun a spot where nobody walks from choice. We may have seen such in Central London or in some suburb, but such mockeries of gardens are rarer now.

There were excuses to be made formerly by their possessors, as fifty years ago people had not the present facilities for obtaining seeds or plants cheaply, nor did they possess the knowledge on gardening subjects which is accessible to all in our popular manuals and periodicals. Another thing we notice which tends to the improvement of gardening in a street or road, is that we often see now a wholesome rivalry. Thus Mr. A makes his little domain showy, and this stirs up Mr. B and Mr. C on each side, so they try to adorn their garden plots. But of course the Londoner has always had to contend with cats and sparrows, with an atmosphere, too, in which smoke and fog combine forces. The limitations of space have generally been hard upon the middle-class Londoner, who occupies a house of from six to ten rooms. His allotment of ground is but small; as a consequence thousands of gardens have been formed on the same model, a border on two or three sides, and a central space of gravel, grass, or simply London clay. Occasionally, where a garden had greater depth or length than the average allowance, one or more middle beds would be formed; these were mostly planted with shrubs, the sides being then devoted to herbaceous plants, or partly sown with annuals.

In 1848 there remained some gardens, even in the thickly populated neighbourhoods, where Pear and Apple trees grew, and occasionally produced fruit, and a Cherry or Mulberry might be found. A few gardens had the centre filled with Currant or Gooseberry bushes, seldom productive, as their insect foes were numerous and diligent. Vegetables have been grown in the back gardens of London streets, but Potatoes or Cabbages seldom; experimenters were fond of trying Peas and Beans, succeeding now and then in getting a small crop. Rhubarb is an esculent which has been raised in very close districts of London.

Scattered on the margin of what was its country border fifty years since were many detached houses, with sufficient garden ground belonging to them for a fair show of flowers and vegetables, often of fruit too, and amongst these we sometimes came upon one having its old style garden of Georgian days carefully kept up. Within the four-mile radius most of them have been removed to make room for houses of a different class. Speaking generally, we may say that there is a tendency all over the suburbs to lessen the gardens allotted to new houses, owing to the increasing value of land. Large slices have also been taken off some of the longer gardens of the past generation, for workshops and other objects. Then there are springing up large blocks of workmen's dwellings and flats, often minus gardens, having only a court or playground. Hence the importance of laying out squares and old churchyards as public gardens, and preserving any vacant spaces yet left in proximity to crowded neighbourhoods. One thing rather surprising is, that when the streets and squares of Belgravia were built, these aristocratic residences got but a small allowance of garden ground, the rear of many being occupied by stables and mews. Of course, the inhabitants have the benefit of an extensive range of parks.

During the last twenty years the erection of large board schools has absorbed some open spaces, and not unfrequently they have occupied the site of an old nursery garden, so that where plants used to be tended, the minds of juveniles are brought now under cultivation, with good results, we hope, though recent accounts of London ruffianism seem to indicate many educational failures. One of Tom Hood's comic designs, illustrating a "Fall of the Stocks," reminds us that

Londoners have long had a fancy for window gardening, and their flower-pots frequently have not been properly guarded on the window-ledge from the effects of wind or accident. It is hard to say which is the more agitated, the good lady who sees her cherished flowers fall to ruin, or the image-seller, amongst whose wares the pots descend with destructive force. Wiser nowadays, people guard against such accidents in the usual way by putting a wire bar, or they have window boxes, not pots; though some had the boxes half a century since, and one plant especially a favourite was *Mignonette*, admired for its fragrance, and supposed to purify the air. May has long been the month when the sale of perennial plants and early sown annuals in pots is particularly brisk about London streets, for the stock of plants is then in need of renewal.

Also, in addition to the window display, there are to be found in thousands of backyards, stands, large or small, with their array of pots. These were formerly conveyed in autumn to a garret or cellar, to reappear after the winter, at least such as survived; but now the Londoner often has a garden frame to hold tender and half-hardy plants, or perhaps he owns a miniature conservatory. One of the metropolitan street cries which has ceased to be heard is, "Buy a bowpot!" What was this? A "bowpot" contained a plant that had the support of a bow of wood, shaped rather like a kite, which might help it to live in the London air. "Geraniums" or *Pelargoniums*, I think, were then in a big majority amongst window plants. Myrtles, of course, have their popularity still, and the *Fuchsia* was spreading abroad. There would be occasionally a *Rhododendron* or *Heath*; some had a fancy for succulent plants, and grew *Cactuses* and *Sedums* in pots.

Londoners at one time could boast of their *Roses*, but the smoke has precluded their culture in the metropolis for many years, and it had so increased as to be hard upon *Tulips* and *Camellias* early in our Queen's reign. But still there remained plenty of old-fashioned perennials for beds and borders, that looked green all the summer, even though they were scant of flowers. It was noticed by Loudon in his time that the mildness of its average winters enabled gardeners to show, even in December, *Larkspurs*, *Violets*, *Gentians*, *Polyanthuses*, and other autumn or spring species.—J. R. S. C.

TOMATO CULTURE.

THE Tomato (*Lycopersicum esculentum*) was introduced into this country in 1596. It is a native of Mexico and South America, but is also found in the East Indies, where it is supposed to have been introduced by the Spaniards. The Malay name is *Tamatte*, and in Mexico it is called *Tamalt* (Dr. Hogg's "Vegetable Kingdom," page 547). It belongs to the same natural order of plants as the Potato—viz., *Solanaceæ*, and is cultivated for the use of its fruit for cooking as a vegetable, as an uncooked ingredient of salads, for making Tomato sauce, and for various other culinary purposes. The fruits, formerly called Love Apples, are sometimes used in a green, but more generally in a ripe state.

When the Tomato, or Love Apple, came into vogue in England as a vegetable I have not been able to ascertain; but Abercrombie, writing in 1788, says:—"The fruits or apples of these plants are, in some families, much used in soups, and are also often used to pickle, both when they are green and when ripe." When I first made acquaintance with Tomatoes they were only wanted for making sauce, the plants being grown against south walls on the vacant space between fruit trees, and in warm situations in favourable localities trained to staked trellises. In 1818 I saw Love Apples thus grown in the open as far north as York, the plants being put out when not more than a foot high, and then very sturdy, short-jointed, in flower, and even setting fruit. They were planted on May 13th a yard apart, and protected on cold nights up to the middle of June. They bore abundance of fruit, and ripened almost, if not quite, as well as similar plants against a south wall.

Another point I have not been able to settle is when Tomatoes were first grown under glass for maintaining a continuous supply of fruit from an early to a late period of the year, or even throughout the whole year. Of course I know Love Apples were grown in greenhouses here and there, partly from fancy, and partly to secure a supply of fruit in cold localities for the desirable sauce. Every cook seemed to need some fruit for this purpose, and, as far as I can remember, no other. "Kitchen servers" have generally good memories, especially when the house is a mile or more from the kitchen garden. There was no such thing in that establishment as growing Tomatoes under glass up to the ripening of the fruit, nor in the up-to-date gardens near by, though the bedding-out craze was at its height, and there were many small houses or pits at liberty from May to September inclusive, that could then, or now, have been utilised for the purpose. After the Great Exhibition of 1851 the taste for everything grown under glass developed

at an enormous rate, and now and again houses of Tomatoes were to be seen in various parts of the country, until they became quite general, and after 1870 a number of establishments sprang into existence in which Tomatoes were cultivated on a vast scale under glass.

Tomatoes can be had from January 1st to December 31st—a big stride from the August to October supply, as commonly produced half a century ago on south walls. Tomatoes are in shops every day in the year, and it is a question of the home grower or the foreigner producing them. That is just the difference—an outdoor climate pitted against under glass cultivation. Taste, of course, has to answer for this, though not being content with the supply as had from walls and the catering for it by growing the fruit under glass. I know many walls are still devoted to Tomatoes, but both they and the fruit trees have gone under glass to a very large extent.

In the good old times—8s. a week and bothy for a growing lad far on in the teens—there were no eelworms at the roots of Tomato plants, and no Love Apples with scabbed faces. The plants were grown "hard," and they defied all their enemies in the soil and in the air. The cultivators knew very little about fertilisers, save the substantial "muck," handy lime and tell-tale soot, with a little guano. Salts, except common, were hardly known in gardens, yet the plants were healthier, and produced as good or better crops than now they are forced out of health and into disease.

Professor A. H. Church, F.R.S., in his "Food" says that Tomatoes "require good soil and abundance of water," with which I do not culturally agree, for the more water the more "rot." But I can appreciate his analysis of the Tomato as an article of food, and give the public taste credit for the free consumption of such healthy and wholesome food.

Ripe Tomatoes contain in 100 parts:—

Water	...	...	...	...	...	...	89.8
Albuminoids, &c.	...	...	...	...	...	...	1.4
Sugar	...	...	...	...	...	...	6.0
Malic acid	...	...	...	...	...	...	0.7
Cellulose and pectose	...	...	...	...	...	...	1.3
Mineral matter	...	...	...	...	...	...	0.8

The nutrient value of the Tomato is more than twice that of the Vegetable Marrow, and it contains malic acid, which is said to be good for the "brain." Yet how the asylums multiply! People must really eat more Apples—*Pyrus Malus* vars.; and Love Apples—*Lycopersicum esculentum* vars. How to produce the latter will follow, for there is no reason why anyone having a fair garden should not grow Love Apples for his household. There will always be plenty of growers for market. Thus ends the preamble.—G. ABBEY.

(To be continued.)

THE LONDON FRENCH HORTICULTURAL SOCIETY.

THERE was a large and enthusiastic muster of members and supporters of the above named Society on Saturday evening last at the Imperial Restaurant, Strand. Mr. Drost of the Kew Nurseries occupied the chair, and was supported by the presence of several English friends of the Society. After the dinner was over the President of the Society, Mr. Geo. Schneider, introduced the Chairman, and touched briefly upon the progress of the Society.

Ms. Drost said it was an honour to occupy the chair on the occasion of their tenth annual dinner, for looking back in the past there was every ground for great satisfaction, for the Society, which began in a small way, now numbered something like 500 members in all parts of the world. Their library, which began with only twenty volumes, now consisted of 120, many of which during the past year had been rebound. Notwithstanding this and other expenses, they could congratulate themselves upon having £22 more in the bank than they had at this time last year. Much of this success was due to the devoted and active efforts of their good friend Mr. Schneider, and he would ask them to drink to his health, and this was done with a burst of enthusiasm. Mr. Schneider replied, and looking round the room said he was gratified to see so many English friends present, and he would ask them to drink to the health of the visitors.

Immediately following this, Mr. Guilloud arose to make a presentation of an electroplated *cafetière* to Mr. Schneider as a mark of esteem on the part of the members. This was suitably acknowledged, and then Mr. Arnold Moss responded in a humorous vein for the visitors. He felt sure these gatherings did an immense amount of good, and he assured his young French friends that the wish of the English people at large was to see France happy and prosperous, and the two countries on the most friendly terms, expressions which evoked the heartiest acclamations. Mr. Gachelin proposed the English Horticultural Press, to which Mr. Harman Payne briefly replied, saying that, although he was not a professional journalist, he felt sure that the English Press took a great interest in their Society, and would help it on in its useful career.

THE GARDENERS' ORPHAN FUND.

If "Annual Subscriber" had referred to his copy of rules governing the Fund's management, he would have found that the Secretary can be appointed only by the members at the annual general meeting, and that the office is but of annual duration, as that official has to submit himself for re-election yearly.

Naturally, the subject of filling the office vacated by Mr. Barron was the primary one discussed at the recent Drill Hall meeting, and on every hand I found a consensus of opinion in favour of the election being by ballot. Still further, it was held that the Committee should severely refrain from nominating any one person, but, there being four or five selected from the entire body of candidates, their names should be printed on a ballot paper, and copies handed round to each subscriber present, who should vote by putting a cross against his favoured candidate, the papers being collected by scrutineers and counted, no paper being accepted other than those collected in the room. Each paper should be signed by the subscriber, but only as a guarantee that he was entitled to vote.

It is but natural that there should be much anxiety to secure for the post the best possible candidate, and one who is not only familiar with the Fund, but one who has been a worker and helper in it in the past, and who is essentially identified with gardening. It is unfortunate that in publishing the advertisement inviting applications it was not made clear that applicants must be associated with the gardening vocation, and not to exceed a certain age; also should furnish a pecuniary guarantee from some acceptable society. These were conditions that would have occurred to any body of good business men. Personal canvassing other than through circulars or cards should have been held to disqualify candidates at once. These conditions would have cleared the ground largely at the outset. As it is, very many persons have applied for the post whose prospects are, to put the matter mildly, ridiculous.

It must not be forgotten that for the work, which is largely, after all, formal and regular, not spasmodic, is well remunerated with £100 per annum. As was remarked at the Drill Hall, it is "a decidedly good screw." It ought to secure the loyal services of a first-rate man; too much care cannot be taken to prevent any sectional or mere market appointment. The selected official should be a thoroughly honourable man, having the confidence of all sections of subscribers. I hope before promising votes every subscriber will await the decision of the selection committee, and even then do so only on mature consideration.—A. D.

CAN it be true that the selection committee, or whatever it may be called, appointed to examine the applications for the secretaryship and report thereon, consists mainly of what are known as Covent Garden Market men? If so, it cannot be fairly representative, and if there happen to be an able Covent Garden candidate, some of the members can scarcely feel themselves in a pleasant position in the conscientious discharge of their duty.

Several growers of produce for market have been good supporters of the Fund during recent years, and some have been, and are, useful members of committee, but the founders of the Society were private gardeners and pressmen chiefly, who took the responsibility and shared the anxiety and work in establishing it. This being so, it is but reasonable that they should be represented on the reference committee as well as the horticultural trade and market men. It is hoped they are, though reports say they are not, and if not it is a pity.

It is no secret that among the numerous candidates are men of undoubted capacity, intimately connected with gardening and the gardening press, as well as with secretarial work—men who have been strenuous workers for the Fund, some of them over many years. If these men are not adequately represented on the examining committee it cannot be so complete as it ought to be. It may be granted that the members will act honestly and fearlessly, still it does not appear to be altogether appropriate that certain sections of the horticultural community should be practically ignored.

The rumour was current at the last R.H.S. meeting that amateurs were represented on the Committee by the Chairman, Mr. W. Marshall, traders by Mr. Weeks, and everybody else by Messrs. Assbee, May, Poupart, and Walker, marketers. This may not be a complete list; whether it is or not, neither a private gardener nor press representative was mentioned at the Drill Hall, and the assumed omission was thought strange by more than one.—MEMBER, BUT NOT A CANDIDATE.

HAFODUNOS.

THIS, the seat of Colonel Sandbach, is situated in the County of Denbigh, North Wales, and its nearest railway stations are those of Llanwrst and Abergele, which are respectively seven and eleven miles distant. This fact no doubt explains why Hafodunos has so seldom been referred to in the gardening press, as from a horticultural, and more especially from an arboricultural standpoint, it is quite entitled to take a prominent position. "Hafodunos" is a Welsh word meaning "Rest for one night," and tradition says that the body of St. Winifred rested here for one night on its way to its final resting place at Holywell.

The estate is about half a mile from the pretty village of Llangernyw, on the road from Abergele to Llanwrst, which is about eighteen miles distant, and this road, from beginning to end, was made by and at the sole expense of the late Squire of Hafodunos, who was throughout his long residence a great benefactor to this district.

At the entrance to the park is a commodious lodge, built entirely of stone, and on passing through the lodge gates the visitor at once gets a foretaste of what this place is more especially noted for. There are to be seen on the right side of the carriage road some magnificent specimens of *Wellingtonia gigantea*. Most of them were planted about fifty years ago, and are at the present time 60 feet high. They stand on rapidly rising ground, and all of them are in perfect health and vigour, and each differs in habit from its fellows. Proceeding along the drive towards the mansion we notice many splendid trees and shrubs. The mansion, a most beautiful structure, built some thirty years ago from designs by the late Sir Gilbert Scott, on or very near the site of a former residence, is about 500 yards from the gates.

Near here are part of the ruins of an ancient monastery, and most of us know that in consequence this place must be pleasantly situated and the soil around it generally fertile, for the monks of old were no mean



FIG. 9.—HAFODUNOS.

judges in selecting the best positions for their abodes. We almost invariably find that wherever there is a monastery or monastic remains there is an abundance of good water, good fishing, and good land, where fruit and vegetables can be grown, thus insuring them a constant supply of the good things of this life.

At Hafodunos we see many plants growing vigorously and flowering freely that are only seen in highly favoured localities. On the front of the mansion many of our best and tenderest varieties of Tea Roses grow vigorously, and during the season are covered with flowers of excellent quality. Amongst others there are several large plants of Fortune's Yellow, a most exquisitely beautiful variety, but rarely seen doing well in the open air. On the terrace walls we noticed many climbing plants that in the north and the midlands have to be wintered in conservatories and greenhouses, yet here in North Wales they thrive apace, and year after year are covered with beautiful blooms. Very conspicuous was an exceptionally large plant of *Escallonia macrantha*, covering at least 80 square feet of terrace wall, and full of flower.

At the bottom of the terraces flows a beautiful stream of water, which has cut its way through the hills and rocks, in some places forming quite deep ravines and in others a beautiful dell, or dingle, as they call it there. Along its banks, and in many other parts of the grounds, are superb specimens of the best varieties of *Rhododendrons*, and they must

look gorgeous when in full bloom. Many of the Sikkim varieties are represented by plants 15 feet high by 20 feet through, and these being well backed by magnificent Conifers, interspersed with noble forest trees, must during the summer months form such a grand pictorial display as is only too seldom seen.

Passing along the side of the dingle, we come to a rustic bridge, from which a view can be obtained of a beautifully designed miniature cascade and waterfall. Near here there are many charming bits of rustic scenery, which can be viewed in comfort at nearly all seasons of the year, as this walk is admirably sheltered from both cold wind and summer sun. Its sides are planted with Conifers, Rhododendrons, and many other evergreen and deciduous shrubs, whose stems and branches are almost covered with the beautiful grey lichen. Many of the larger trees and shrubs tower high above us, others far below, even down to the very edge of the stream, and it is a great delight to gaze down upon those marvellous specimens of Pinus and Piceas, all studded with their beautiful cones.

Towards the end of the dingle we reach the kitchen gardens, of which this rivulet runs through the centre, with on each side rapidly rising ground devoted to fruit and vegetable culture. But so sharp is the gradient that at all seasons it must be very difficult to work and crop the land; yet Mr. Jones, the able and experienced gardener, succeeds in producing abundant crops of both fruit and vegetables of large size and excellent quality.

On the walls I noticed some fine crops of Plums, Transparent Gage being well to the fore. In one of the quarters I saw a very large stock of choice Conifers, both seedlings and transplanted stock for planting in different parts of the estate, as Colonel Sandbach is year by year improving his estate by planting large quantities of trees and shrubs, intermixed with many choice Conifers, and it is surprising how well many of the Piceas and Araucarias are doing even in the most exposed situations. This advanced and enlightened practice might with great advantage be copied by many of our large landed proprietors.

The glass department at Hafodunos is not extensive; adjoining the mansion there is a small but very beautiful conservatory, in which are some fine Camellias and Ferns. The walls and pillars are covered with healthy plants of Lapagerias, Tacsonias, Plumbagos, and Passifloras. In the kitchen garden there is a long range of glass devoted to the culture of Peaches, Nectarines, and Figs, which have produced abundant crops of splendid fruit for many years past. Tomatoes, Cucumbers, and Melons were equally well done, and the same must be said respecting such decorative plants as Chrysanthemums, Begonias, and Cyclamens. There is only one large vinery, but the crop was heavy and the fruit of good quality. Near this vinery there is a large unheated structure, which is set apart for the culture of Pears, and many of the large trees in this house were loaded with crops of excellent fruit.

I must now revert to the Coniferæ, for they are the real gems of this beautiful place, and a few particulars respecting their size and history may prove especially interesting to many. The late Squire of Hafodunos was not only a lover and planter of Conifers, but he was a most enthusiastic collector and raiser, and many of the finest and most unique specimens of Conifers were raised from cones gathered by him during his travels from trees growing in their native habitat, and planted here many years ago. The present owner is, like his father, a most ardent and enthusiastic arboriculturist.

Among other Conifers that we saw, the following are the names and dimensions of a few of the best:—

Abies Albertiana, 80 feet high and 7 feet 9 inches in girth at 5 feet from the ground; this is a truly marvellous specimen, perfectly symmetrical and well furnished throughout.

Abies Hookeri, 18 feet high, and Abies Pattoniana, 16 feet high. These two varieties have long been classed as synonymous, but as seen here, growing side by side, they are very distinct.

	Height.	Girth at 5 ft.
Abies Douglassi	70 ft.	8 ft. 10 in.
„ Menziesi	60 „	„
Araucaria excelsa	52 „	5 „ 0 „
Cedrus atlantica	55 ft.	7 „ 0 „
„ libanus	48 „	8 „ 9 „
„ deodara	58 „	„
Cryptomeria japonica	45 „	„
Cupressus Lawsoniana	56 „	„
„ Lobbi	36 „	„
„ Lawsoniana aurea	13 „	„
Thuia gigantea	62 „	8 „ 8 „
Retinospora ericoides (a perfect specimen in every respect)	13 „	„
Juniperus recurva	30 „	„
Picea pinsapo	45 „	„
„ nobilis (a noble specimen carrying many splendid cones)	75 „	5 „ 3 „
„ Nordmanniana	51 „	„
„ lasiocarpa	60 „	6 „ 10 „
Pinus Benthiana	45 „	„
„ excelsa	55 „	5 „ 6 „
„ Lambertiana	24 „	„
„ pyrenaica	30 „	„
„ rigida	24 „	„
„ muricata	45 „	6 „ 9 „
Taxodium sempervirens	55 „	10 „ 7 „

Sciadopitys verticillata (the Umbrella Pine).—A most unique and perfect specimen, which has borne cones for several years past. It is now about 13 feet high, in perfect health, and growing well.—C. L. Welton, East Yorkshire.



WEATHER IN LONDON.—Since our last impression was sent to the machines the country has been visited by a gale of exceptional severity, and which was attended by serious accidents. This commenced on Thursday, in the afternoon of which rain, hail, and snow fell, with a violent hailstorm about ten o'clock at night. On Friday morning the wild had abated somewhat, and rain fell almost the whole of the day. Saturday brought a change to balmy air and glorious sunshine, while on Sunday morning came a reversion to a downpour of rain, another following on Monday. Tuesday opened fire with heavy rain later, while Wednesday was dull and damp.

— WEATHER IN THE NORTH.—More or less rain has fallen every day during the past week, and sleety showers have been frequent. Snow fell heavily on the morning of the 12th, and the hills all round are covered. The rainfall was especially constant during Sunday and the following night, but the afternoon of Monday was fair and the evening frosty, 5° being recorded on Tuesday morning.—B. D., S. Perthshire.

— MR. DAVID THOMSON.—A correspondent writes:—“I hope that Mr. David Thomson is well. I should be glad to see more of his weighty articles in the Journal. Mr. Thomson always appears to say a great deal in a small space, which is better than saying little in a thousand words.” [Judging from his bold, clear “copy,” which the compositors like as well as we do, we are glad to think that the veteran is in better health than he was some time ago, and is happy in his garden.]

— BRISTOL GARDENERS' ASSOCIATION.—“Chemical Manures, Specially in Relation to the Kitchen and Market Garden,” formed the subject of an address given to the members of this Association on Thursday last by Mr. F. W. E. Shrivell, and the eighty members present were unanimous in voting it one of the most interesting addresses they had ever listened to.—CHAS. LOCK.

— BIRMINGHAM GARDENERS' ASSOCIATION.—The last meeting of the autumn session of this Society was held on the 9th inst., for the election of the officers and Committee for the ensuing year. Professor W. Hillhouse, Mason's College, was elected President; Mr. Joseph W. Oliver, teacher of botany and geology at the Municipal Technical School, Birmingham, being elected Vice-President; Mr. W. B. Latham Chairman, Mr. Walter Jones Vice-Chairman, Mr. A. Gardiner Librarian, Mr. W. Spinks Treasurer, and Mr. W. L. Deedman Hon. Secretary. A favourable financial balance-sheet was produced by the Treasurer. The gratifying addition of several new members during the past year is chiefly due to the influence of the Hon. Secretary.

— SHREWSBURY SHOWS.—The schedule of prizes offered by the enterprising Horticultural Society of Shrewsbury during the present year is now being distributed. The spring show is to be held on April 5th, and consists of thirty-eight classes, twenty-one of these open to all, the remainder to amateurs only. Practically, all kinds of plants generally in full beauty at the time are provided for. The best prizes are £4, £3, and £2, for a collection of twelve plants (Orchids excluded), the same amounts being offered for twelve Azaleas. The summer show, which opens on August 23rd, however, is the event to which horticulturists of the kingdom will look forward with the greatest interest. In the plant section are prizes of £25, £17 10s., and £10 for groups of plants in and out of bloom, similar amounts being provided for non-flowering plants. For twenty specimens the prizes are £25 and £15, and for thirty plants, in pots not exceeding 10-inch, £20, £15, and £10. The chief cut flower class is for bouquets and baskets, for which the prizes are £15, £12 10s., and £10. The fruit section contains a class that will be historic—namely, the £100 class for Grapes. It ought to be a battle of the champions, the blue ribbon being £25 and a gold medal. The decorative dessert table class is worthily included with prizes of £15, £12, and £8, while £10, £7 10s., and £5 are offered for twelve dishes of fruit. Those are a few of the leading classes. Excellent prizes for vegetables are offered by leading seed firms. The show is bound to be one of great magnitude and diversity, seeing that the schedule contains 200 classes. The railway companies will return plants free that remain the property of exhibitors, and the Committee undertake to render all possible help in conveying exhibits from the station to the show ground free of cost.

— **GARDENING APPOINTMENT.**—Mr. W. Owen, general foreman at Madresfield Court Gardens for the past three years, has been appointed head gardener to the Hon. G. H. Allsopp, M.P., Foston Hall, Derby, in succession to Mr. G. Lewis, who retires from gardening, and takes up farming in March next.

— **HEAVY RAINFALL IN SCOTLAND.**—Last week (page 29) we published monthly accounts of rain at Curraghmore, Ireland, the year's total amounting to 42.59 inches. A correspondent now sends us the following records:—"The rainfall for 1898 recorded at North Craig Reservoir, parish of Kilmarnock, was in January 3.15 inches; February, 4.10; March, 1.85; April, 2.05; May, 1.95; June, 2.70; July, 1.65; August, 5.00; September, 5.00; October, 4.05; November, 5.95; December, 7.75. Total, 46.10. Average yearly fall, 41.94 inches."

— **SHIRLEY GARDENERS' ASSOCIATION.**—The monthly meeting of above Society was held at the Parish Room, Shirley, Southampton, under the auspices of the Technical Education Committee, Southampton County Council. Mr. W. F. G. Spranger, C.C., presided, and a good number of the members were present. The lecture, which was entitled "The Effects of Electricity on Plants," was given by R. W. Stewart, Esq., D.Sc., London, Principal of Hartley College, Southampton, was illustrated by diagrams, electric apparatus, and lantern slides, and was both interesting and instructive.

— **A USEFUL DESK PAD.**—We have just had forwarded to us one of the most useful desk pads we have seen. It is from the great sundriesmen, Messrs. Wood & Sons, Ltd., Wood Green. For gardeners it should be extremely valuable, more particularly perhaps the diary given on the left hand side, and in which each day is allotted goodly space. Important memoranda made therein could scarcely be lost, and certainly would be handy for reference. The pages are interleaved with blotting paper, and that means a saving of valuable time when work presses. The central portion is devoted to the customary blotting sheets, while on the right is the pencil in its loop of elastic, pockets for paper and envelopes, and a tablet for notes of moment. The left and right hand sides close over the central pad when it is not in use.

— **HORTICULTURAL CLUB.**—The usual monthly dinner and conversation took place on Tuesday last. The chair was occupied by Mr. Harry J. Veitch, and there were present besides the Rev. W. Wilks, the Rev. J. H. Pemberton, Messrs. Charles Shea, George Monro, James H. Veitch, G. Bunyard, C. T. Druery, and others. The discussion was opened by Mr. Chas. E. Shea with an interesting paper, entitled "A Chat About Chrysanthemums." Many points of much value were brought forward, and there seemed to be an unanimous revolt against the race for size which now marks the Chrysanthemum. Most of the members took part in the discussion which followed over the paper, and many interesting statements were made. A hearty vote of thanks was accorded to Mr. Shea. It was announced by the Secretary that the annual meeting would be held on February 14th, when the chair would be taken by Sir John Llewelyn, Bart., M.P., the Chairman of the Club, and ladies would be specially invited to attend.

— **MAKING PEACH BORDERS.**—Certainly I have every reason to be satisfied with the results of my request for criticism on a proposed compost for a Peach border. That the compost has been unanimously condemned as too rich and soft I fully realise, and trust that young gardeners who may some day have to perform the work of making stone fruit as well as Vine borders, have noted the criticisms, and will benefit by them. There can be no doubt but that the evils which have come to both Vines and stone fruits have largely arisen from over-made, too enriched soft borders, which have bred in the Vines and trees all sorts of diseases. I have been specially pleased to have drawn from his well-earned retirement that fine old gardener, Mr. David Thomson, whose long life experience in these matters should make him a master to whom young men should listen with all due respect. Youth is often in a hurry, but the old greyheads of the profession know from life-long experience that too great haste in culture too often leads to failure. Gardening is of so progressive a character that even the oldest have never done learning. I should not like to be always suggesting subjects for criticism, as some may be more or less empirical, but there does constantly occur to readers of the *Journal of Horticulture* topics of exceeding practical interest, and the starting of one of these topics now and then with such results as have followed my little venture, cannot have other than very practical value. Being of a practical turn of mind I prefer practical writing, hence I thought what so far has been done is well worthy of more complete following.—A. D.

— **WHAT IS THE "RECORD" CROP FOR AN APPLE TREE?**—In an account of a remarkable old orchard in the United States, given in an American paper, the writer states that the late owner often picked twenty barrels of greenings from one tree. Now twenty barrels would be nearly 60 bushels, and such a yield is almost incredible. Are there any records of great yields of Apples per tree in this country? Perhaps you or some of your readers may have memoranda of wonderful yields.—**INQUIRER.** [We have assisted to gather 80 pecks of fruit from a standard Apple tree, and were informed that its maximum crop amounted to 120 pecks. This is only half the above "record." Perhaps some of our readers may be cognisant of heavy yields by individual trees.]

— **ISLE OF WIGHT.**—The annual meeting of the Isle of Wight Horticultural Improvement Association was held at Newport Guildhall on Saturday last. Dr. J. Groves, B.A., J.P., presided over a large attendance of members from all parts of the Island. After the confirmation of the minutes of the last annual meeting the report for 1898 was adopted, on the proposition of the Chairman, seconded by Mr. R. F. Eldridge, Vice-Chairman of the County Council and Chairman of the Technical Education Committee. Then followed the election of officers for the ensuing year, after which a social entertainment took place at Warburton's Hotel. Mr. A. Guy staged a collection of well-grown Cyclamen, for which he received a vote of thanks.

— **HEAT AT THE ANTIPODES.**—The subjoined figures from a daily contemporary will probably assist some readers to become reconciled to the weather and its vagaries to which we are being subjected. An abnormal heat wave passed over the Colony of Victoria, Australia, last month, and on the 5th the "record" was nearly beaten. The maximum in Melbourne was 109.4° in the shade at 3.45 P.M., and 158.3° in the sun, while Mildura registered 110° and Swan Hill 112° in the shade. The day began in Melbourne with a shade temperature of 96° at nine o'clock in the morning, at 2 P.M. the reading was 109°, and by a quarter to four, with a shade temperature of 109.4°, all hot December days since 1876 were eclipsed. In December, 1876, the record in one day was 110.7°. Last December twelvemonth the highest reached was 107.3°, and throughout all last summer, trying as it was, the hottest day was January 11th, 1898—109.2°.

— **HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—A meeting of the above Society was held on Tuesday, January 10th, 1899, Mr. G. Wilson, Swanland Manor, in the chair. Mr. J. Barker, gardener to W. P. Burkinshaw, Esq., Hessle, read a paper, entitled "Orchids for Beginners." The essayist dealt with those Orchids which are most suitable for beginners, giving the houses and the temperatures suitable for the different species. The essayist also exhibited a group of Orchids of his own cultivation, which comprised *Cymbidium Traceyanum*, *Odontoglossum crispum*, and *Cypripedium insigne*, *Niobe superhum*, *Leeanum giganteum*, *Euryades*, and *Pitcherianum*, Williams' variety. There was also a decorative competition for under gardeners for a lady's spray, and a gentleman's buttonhole bouquet. They had to be made in the room before the meeting commenced. The Judges, Mr. Wilkinson, Elloughton, and Mr. C. Lawton, Welton, awarded the prizes as follows: First, Mr. M. Skinner, Bishop Burton Hall, Beverley; second, Mr. Flowers, Tranby Croft; and third, Mr. Donoghue, Tranby Croft. The exhibits were highly interesting, and showed considerable artistic skill. The usual votes of thanks to the essayist and Chairman brought a highly enjoyable and instructive meeting to a close.—J. T. B., Hessle.

— **THE METROPOLITAN PUBLIC GARDENS ASSOCIATION.**—At a recent meeting, under the chairmanship of the Earl of Meath, the sixteenth annual report was read and approved. It stated that during the past year the Association had laid out six new grounds, furnished gymnastic apparatus for another ground, provided trees and seats in sixteen localities, and by means of special gifts from its members erected nine drinking fountains in public gardens and playgrounds, and also given assistance in the acquisition or improvement of a number of other grounds, and in opposing Bills in Parliament which affected public open spaces. It was agreed to approach the Corporation of the City of London with regard to the maintenance of City churchyards, to commence the laying out of Portland Place enclosure in the New Kent Road, to communicate with the London County Council respecting the management of Hampstead Heath, and to make further inquiries about the proposed recreation ground at Finchley and the suggested acquisition of a portion of Wimbledon Park, which is for sale, near Wimbledon Common. Among the subjects discussed at the meeting were the local control of small open spaces, the scheme of the future management of the Physic Garden, Chelsea, and the laying out of Brunswick and Leyton Squares, Camberwell.



ANGRÆCUM VEITCHI.

WHEN the several Committees of the Royal Horticultural Society met at the Drill Hall on the 10th inst. *Angræcum Veitchi* certainly attracted more attention than any other individual plant in the hall. As may be gathered from the name, it was shown by Messrs. J. Veitch and Sons, Chelsea, and it is a hybrid resulting from a cross between *A. sesquipedale* and *superbum* (*eburneum*), of which the former was the seed-bearing parent. The firm's clever hybridist, Mr. J. Seden, had in view the desirability of an increased number of flowers on a spike, and this object will in all probability be achieved when the plant gains in strength. The habit of the plant is quite intermediate between the two parents. The growth is more robust than in *A. sesquipedale*, and the very thick leaves are wider apart on the stem. The flowers are quite as large, if not rather larger, than those of that species. The clear satiny white lip of the hybrid is quite distinct from the seed parent, but partakes more of the character of *A. eburneum* in being wide and open. The spur or tail of *A. Veitchi* is much shorter than in *A. sesquipedale*. The plant staged, and from which our illustration (fig. 10) was taken, was eleven years old, and received a first-class certificate from the Orchid Committee, Mr. J. Seden, V.M.H., receiving at the hands of that body a silver Flora medal for this the first hybrid *Angræcum*.

CATTLEYA DOLOSA.

I FIND no difficulty in flowering *C. dolosa* under the treatment given below. While growing I keep it suspended near the glass at the warmer end of the Cattleya house, affording copious supplies of water by dipping the basket once or twice a day. When the pseudobulbs are matured it is removed to the cooler end of the house and given a rest for a few weeks, but water is never entirely withheld. It is a species that dislikes undue disturbance of the roots; therefore when rebasketing it is absolutely necessary that ample drainage be given, taking care to keep the plant well elevated, and encourage the roots to ramble outside and cling as much as possible to the basket. Peat fibre, with the addition of charcoal nobs, should be employed in the making up, finishing off with a surfacing of sphagnum moss.—G. HAGON, *Fowley*.

RESTREPIAS.

THESE are wonderfully constructed and delicately beautiful little Orchids, worthy of a place in all collections. The elegant blossoms, borne on slender stems, are so delicate and many-coloured that any description falls short of the real thing, and gives but a very poor idea of what they are really like. From Upper Mexico to Southern Brazil these pretty plants are more or less thickly scattered upon the high mountain ranges, and thence collectors have, with much difficulty, sent them from time to time. The genus was dedicated to one of the earliest travellers in these regions, Mr. J. Restrep, by Humboldt, who discovered the first and most generally cultivated *M. antennifera*.

The culture naturally comes very near that of the *Masdevallias*, to which the *Restrepias* are closely allied. This is a cool régime, with ample atmospheric moisture the whole year round, plenty of light during winter, and a constant shade during the summer months. As may be supposed from their habitat, air is as essential to their well-being as moisture, and as long as possible a chink of air may be left on the top of the house wherein they are grown, and a little below all the year round, keeping up the winter temperature to a minimum of 50°, and not allowing the heat in summer to rise much higher than 60° if it can be avoided. Under these conditions they will enjoy life and flower abundantly.

ODONTOGLOSSUM PULCHELLUM.

This pretty species is again in flower, and every year it seems to gain in favour. Little wonder either, for it is one of those charming little kinds that look extremely well, whether on the plant or off, and is moreover one of the easiest in the genus to cultivate. The flowers occur on erect scapes from the side of the bright apple-green pseudobulbs, and have a fine appearance against the narrow sedge-like foliage. The flowers are individually small, but pure glistening white, with a yellow centre to the lip, and they bear a strange resemblance to a small inverted raceme of *O. citrosum*.

It was discovered by Mr. G. Ure Skinner, who sent home to Mr. Bateman so many fine Orchids early in the present century from Guatemala and the neighbourhood. It is plentiful enough now in collections, though for many years after its introduction it was very

rare. There are no coloured varieties known, or at least in general cultivation, but there is considerable variation in the size of the flowers. No Orchid is easier to grow in a house such as suits *O. grande* and similar kinds, and it is one of the best for a cool fernery. Repotting should take place as seldom as possible, once in three years being quite often enough. Fairly wide pots, a thoroughly clear drainage, and a thin compost, consisting of peat and sphagnum moss, suit it well, and water is necessary all the year round.—H. R. R.

SOIL ANALYSES.

WHEN I originally invited discussion on page 455 (last vol.) by suggesting certain information as to soil and site, along with results of crops only, as usually given in lieu of such details, I suggested that such limited statements were no lessons for readers, and that I hoped for the said details so that others (myself included) might do likewise under similar conditions, thus characterising myself distinctly as a learner, as I shall be all my life, concluding it with the paradox that the more I know the less I know, as each step in learning will only display before me a fan-like extension of the unknown. With this inquisitiveness of mind I can conscientiously declare life too short, however long it may be in years.

From these premises, partly stated originally, I should have thought my assertion that I am "no chemist" was almost superfluous. But I should like to affirm myself very much alive to common sense views that are the half-way house between exact science and rule-of-thumb in regard to production from the soil, and concerning which some very good hands at this industry would probably share my views as to its being a very fair basis to occupy when we are "no chemists."

I do not for one moment contend that direct experiment is not very valuable. On the contrary, I have said more than once it should concur with analysis of the soil. If analysis precedes, and the lime question is thus solved, the direct experiments following will occupy less time than by ignoring analysis and experimenting some years, and having to acknowledge ourselves beaten in some cases by the very insufficiency of lime; others, if lime be present, will be more fortunate. To say that the presence of lime can be demonstrated by twopence spent in chemicals is quite correct, but the operation does not register its proportion, and hence the 10s. expense for the mechanical part of the process is highly instructive, as it simultaneously informs us equally well about proportions of humus, clay, and sand, and every enterprising gardener ought to look to it.

In spite of an "English Gardener," whom I suppose I am directed by himself to identify with "Gardener, *England*," on page 481, last vol., I make bold to assert that I had my own orchard, probably at an age when he was in charge of none, as I was only seven years old when I planted it with self-discovered seedlings of Apples, Pears, Plums and Cherries, from pure love of the subject from those early days that has never since deserted me. Yet perhaps he will forgive my faith in our getting on very well together, as nothing attracts me more than the capacity of taking trouble; and that he has done in having ten analyses made from a soil not homogeneous, and thus obviously unfavourable for my purposes, as he thus found completely differing results between them all. But he still omits to inform me of the proportions of lime he found, and yet the main factor of my entire argument is the presence of lime, a very broad basis admittedly, which does not soar beyond common sense capacity.

Nobody will dispute the obvious truth of the greatest successes in cultivation having been derived from direct experiment, because they extend back some generations, whereas analysis so applied is a short cut in modern ways that is destined to economise direct experiments, and which has yet many sceptics to contend against whose successors may take opposite views, although soil not homogeneous will ever continue to require exceptional treatment. An "English Gardener" only does the right thing in such restive conditions of soil as he has to contend with, in preferring a gardener's instinct to direct the management. But want of faith in analysis is beyond this cavil, and the pessimism expressed is simply misdirected energy.

My reference to Mr. Cousins' treatise was quite to the point and very brief, concerning absolutely only the bare fact of his deprecating proprietary manures. If "English Gardener" obtained the book and looked for a variety of information he was unable to obtain he is not justified in blaming me. Being "no chemist," I am able to learn a good deal from it. I advise my critic to refresh his memory as to the last paragraph of mine on page 481 concerning the value of analysis of the soil as judged by competent City chemists named and their faith, quoted as expressed by them in the "Standard" recently.

Nor had I mentioned or directed "English Gardener's" attention to plant ash analysis, having heard such contradictory value attached to it, including Dr. Hall's own words, as listened to by me in his lecture at the Drill Hall, and Mr. Cousins' in his Primer. (That both these gentlemen are members of the Kentish College at Wye may be

unknown to "English Gardener.") I am thus unconscious of the motive of this argument being brought into battle as if it were making a point against me. My common sense told me to keep aloof when doctors differ, and to prophesy only when I know, as I do know about lime, which those who fail to analyse soil do not. Could "English Gardener's" life be lived over again, with a little previous knowledge, and having to deal with homogeneous soil, he might be brought to bless analysis in all its forms, even including plant ash, which is held in great esteem in some foreign lands rich in faith in analytical science.

As to "Wanderer," his friend Jones may have become greyhaired since the greater part of a generation in the protracted effort to learn

BARK PRUNING AND LIFTING OLD PEAR TREES.

I WAS greatly interested on reading the profitable results obtained from Mr. Edward Luckhurst's practical advice to ring or bark-prune the rampant growing fruitless Pear trees. The results proved to have been more profitable than could have been reasonably anticipated from such a simple operation, described on page 470, December 22nd. In the following week's issue "W. R.," on page 497, quotes an instance where bark-pruning was perfectly successful. The Editor gives further evidence of what has been done by bark-pruning or ringing, with little cost of labour. I shall be glad to learn from practical correspondents

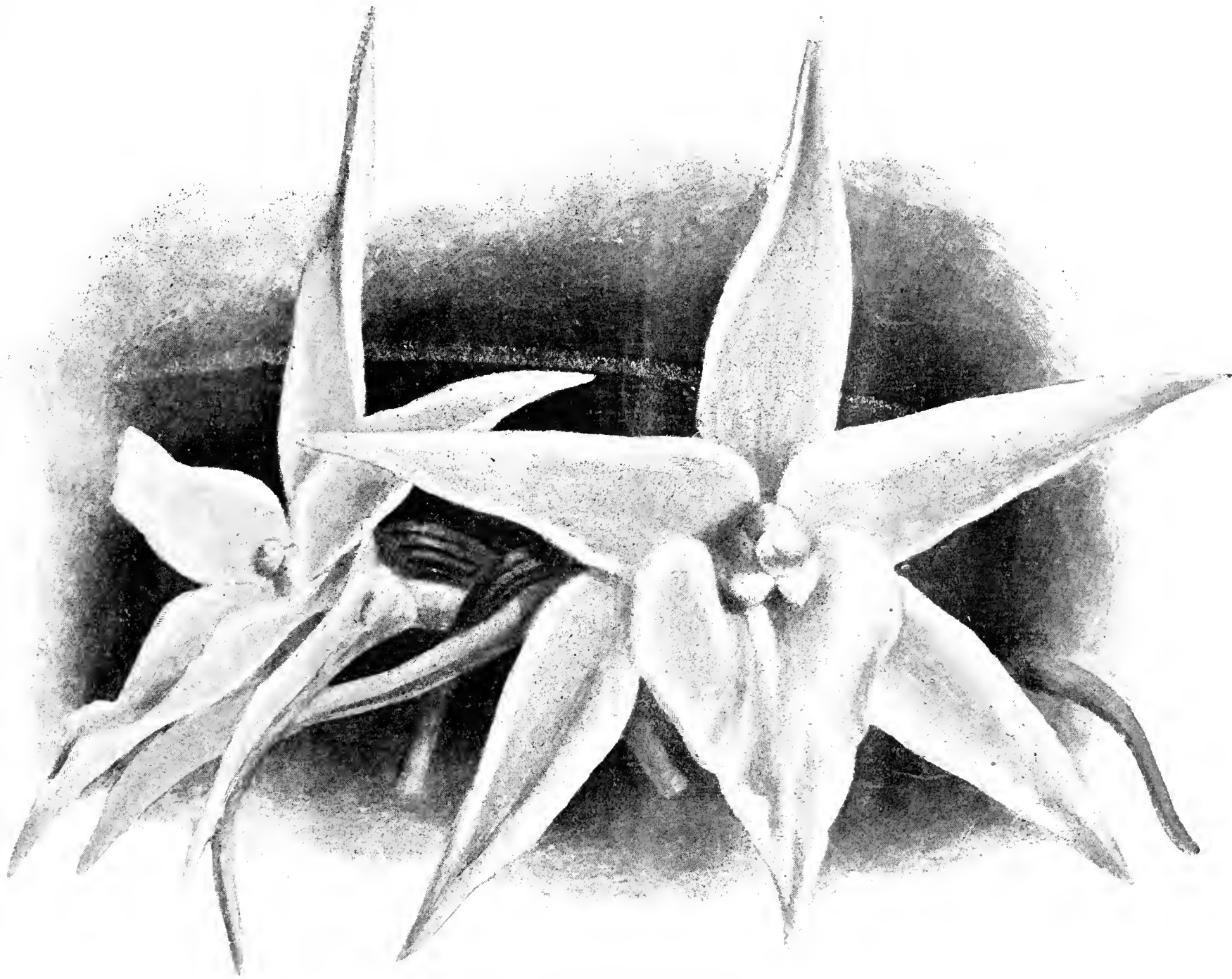


FIG. 10.—ANGRÆCUM VEITCHI.

the lessons acquired from direct experiment he abides by, unless he had a kind preceptor in younger days, especially if on the identical area. Nor do I say that deep digging and trenching is not worth more than promiscuous manuring. Make the best of any soil workable at all, I have said more than once, but do not despise the aid of science, although it is manifest that the only feasible effect producible by analysis is to enable higher class produce than previously obtained to be grown on the most advantageous terms. That extra is equivalent to the difference between a bare living and something to spare.

In reply to the Editor's footnote on page 500 (last vol.) *re* clubbing of Brassicas: of course the discovery of gas lime as an antidote against that evil was made by a scientist; I merely quoted the one instance in point only *à propos* of "lime." I am glad of the tribute to science in the closing words on the page cited, and would observe that gardeners must not imagine they are monopolists of editorial endorsements.—H. H. R., *Forest Hill*.

[The Editor believes in the logic of accomplished facts, and that the best results in the production of crops are not achieved by wrong methods, whether these have been based on soil analysis or not. His views generally are condensed in the introduction to Mr. Cousins' Primer, where ordinary soil analysis is not regarded as an essential in cultivation.]

what advantage would be likely to accrue from ringing the stems of Pear trees that have their principal roots down in a hard red hungry clay.

This winter we have lifted and root-pruned seven horizontally trained Pear trees. Five out of the seven have been planted about thirty years, the other two not such a long time by ten or twelve years. The varieties being good ones—viz., two Marie Louise, with one each of Winter Nelis, Doyenné du Comice, Easter Beurré, Hacon's Incomparable, and Williams' Bon Chrétien—I wished to improve them. The trees produced plenty of wood, but the foliage was of a yellowish green, and very thin in texture. The trees averaged about 20 feet run of wall 12 feet high. For the last six years the seven trees have not produced two stones of fruit in one season. They are planted on east and west aspects.

It will be easy to understand that since the trees were planted, thirty years ago, that the borders have been raised considerably through adding various manurial agents. We commenced about 8 feet from each stem to dig out the first trench, and gradually worked away the soil. Very few roots were nearer the surface than 2 feet, except a few small ones recently made through top dressing, and liquid manure, which was given three times a year. Two roots growing from the stem, and as near the surface soil as it was possible to select, were

left to each tree; all the other large roots, being in the clay, were severed. Each tree was then lifted or raised up about 12 inches, in some cases more, the roots being well packed up with fresh soil (after digging out the clay) about three to five barrowfuls to each tree. The best of the old soil was returned, well mixing with it a quantity of basic slag. Some of the tree stems, from the collar upwards, were buried from 12 to 15 inches with soil. After the roots were laid near the surface and covered with soil, a mulch of half-decayed manure was given 4 inches thick, extending 6 feet from the stems.

Each tree when first planted had a stone slab about 18 inches square placed underneath its roots, or rather, the tree was made to stand upon the slab. The roots had turned over the edge of the slab and gone straight down into the hungry clay, the slabs being fast in the grasp of the roots. I consider that placing a slab underneath a tree when planting to be useless; it sounds very well on paper, but benefit to the tree is *nil*. What effect the above operations will have on the old trees time will show. I have operated on old fruit trees in a similar manner years ago, and in two years after the operation they bore respectable crops of good flavoured fruit.

Some of your readers may perhaps come to the conclusion that I have been wasting time in root-pruning and lifting those seven trees. What led me to take action was the condition of a Marie Louise Pear of the same age. It had been planted close to the doorway of one of the main paths. This path being much lower than the borders half of the roots were underneath it, and the neck or collar of the tree was not covered with soil, similar to those that have been lifted. Through making holes in the gravel paths with a crowbar, then giving 70 or 80 gallons of liquid manure about three times a year, 3 to 4 stones of splendid russety fruits have been produced during the last three years, or more than the whole of the seven trees just lifted produced.

How trees can live in the hard clay is a mystery to me. You may give 100 gallons of liquid manure to each tree, but by the time it reached the roots it would be little more than clear water, having been filtered while passing through the 2 or 3 feet of soil from the surface down to the roots. Hacon's Incomparable had one root nearly as thick as the stem and went straight down into the clay. Result—abundance of long weak shoots, with foliage of a yellowish hue. Tree produced eight to twenty fruits per year, never fit to eat. They remained (not as good as a Turnip) in the fruit room, quite hard. All at once the fruit would become rotten; there has never been a fruit fit to eat for the last six years that I have known the tree (aspect west). Easter Beurré, on the other side of the wall (east aspect) produced about 10 to 12 lbs. of fruit each year, about 1 lb. of the fruit useable, the remainder covered with black spots and much cracked. The principal roots being deep down in the red clay, what I should like to know is this—would ringing have improved those trees? Cordon Pears on the same walls give good fruit.—GEORGE PICKER.

[We should doubt the efficacy of ringing under the circumstances, but are open to conviction by "W. R." or others who have reason to think differently. If the branches of the trees are fully too close together the removal of every other to near the stem might lead to the issue of young branches while lessening the strain on the much-reduced roots; and if the spurs on those remaining are closely set reducing them to a foot apart or thereabouts would be further conducive to healthy growth.]

ROYAL HORTICULTURAL SOCIETY.

JANUARY 10TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair): Mr. Veitch, Mr. Bennett-Poë, Dr. Müller, Dr. Russell, Rev. W. Wilks, Prof. Church, Mr. Michael, and Rev. G. Henslow, Hon. Sec.

Bigena Orchid.—Mr. Veitch exhibited a flowering plant of an *Epicattleya* (Mrs. Jas. O'Brien), *Epidendrum* × *O'Brianum*, the latter being *E. evectum* × *E. radicans*. The male parent was *Cattleya Bowringianum*. It has been stated that in these *bigenas* the result generally resembled the female parent almost entirely, but in this case there was a decided inclination towards *Cattleya* in the form of the lip and foliage.

Mildness of the Season.—Mr. Wilks brought a spray of Oak leaves, still partially green, and mentioned that Blackberries had been lately gathered ripe—an unusual occurrence in early January.

Thuja gigantea (plicata) barked.—Dr. Masters showed a stem which had been nearly stripped of its bark, exposing the central axis as an almost cylindrical rod. The young wood had made renewed efforts to surround the latter, which appeared to be dead. It was received from Mr. Croucher, of Auchstertyre, near Crieff.

—PEAR PRINCESS.—When at the Chrysanthemum Show in St. George's Hall, Liverpool, in November last I tested the flavour of this Pear. In appearance it much resembles Louise Bonne de Jersey. The flavour is first-class, being exceptionally juicy and sweet. It is said to grow vigorously and bear freely on the Quince stock.—E. M.



NATIONAL CHRYSANTHEMUM SOCIETY.

ON Monday evening last the Executive Committee of this Society held a meeting at Carr's Restaurant, Strand, when Mr. T. W. Sanders took the chair. Minutes and routine correspondence having been disposed of, the report and circular of the Classification Committee, intended to draw the attention of affiliated societies to the question of too-much-alike varieties, were submitted for consideration. The election of Judges for the 1899 shows next occupied attention with the following results:—October Show, Messrs. G. Langdon and J. McHattie; November Show (plants), Messrs. D. Donald and Reeve; incurred blooms, Messrs. Geo. Gordon and J. W. Moorman; Japanese, Messrs. E. Beckett, T. Bevan, E. Molyneux, and R. Parker; decorations, Messrs. J. Hudson and H. J. Cutbush; fruit, Messrs. G. Reynolds and J. Smith of Mentmore; vegetables, Messrs. H. C. Prinsep, W. Fyfe, J. Willard, and G. Maycock; at the December Show, Messrs. W. Mease and P. Waterer. The Judges of miscellaneous exhibits at all the shows are Messrs. Gleeson, Outram, and Witty.

The Secretary next read the draft annual report, to be submitted at the general meeting. In this the work of the past twelve months was reviewed, and satisfaction expressed. The draft financial statement and balance sheet was also submitted, and both were recommended to be laid before the annual meeting in the form presented. There was much discussion concerning alterations of rules, the voting of representatives of affiliated societies, and other formal matter. Some new members were elected, and the meeting closed.

WELLS' CHRYSANTHEMUM CALENDAR.

CHRYSANTHEMUMISTS seem ever to be on the search for novelties, literary and otherwise, and we cannot say there is any particular lack of either. This calendar of what should be done under the different months in growing Chrysanthemums is no microscopic or even waist-coat pocket affair, and, if affixed to the wall of potting-shed or office, will be distinctly visible to the naked eye. It is a sheet about 3 feet long by nearly 2 feet wide, embellished with photographic illustrations of Australian and other novelties, with the letterpress bold and clear. Mr. Wells evidently attaches importance to "size," both in blooms and bills, and both are of good quality in this latest from the press of Redhill.

FEEDING CHRYSANTHEMUMS.

I READ with much interest "T. C.'s" contribution *re* chemical constituents of the Chrysanthemum plant, and I have often thought it would be of great service if one of your contributors would give an article or articles dealing with the scientific treatment of the plant with regard to feeding, from the stage of the young plant onwards. By feeding, of course I mean anything added to the loam, be it only leaf mould—not only the liquid feeding of August onwards.

It seems to me a lazy and wrong principle to be satisfied to apply either dry or in solution any particular mixture of artificial manures without the knowledge of what they are composed. I have no doubt that most of them are very good, but there is no guarantee of their composition, or that they are invariably alike, so that you may easily be using at a given moment something which is absolutely useless to you for the particular plant and stage of growth in hand.

As it is a rather slack season now, would it not be a good opportunity to publish a contribution on the subject from some reliable scientific horticulturist, and also from experienced growers, which would tell us in plain language exactly what the Chrysanthemum should have during its life to attain the highest possible result, not "so much of Smith's, Brown's, or Robinson's manure for all kinds of plants," but specifying the amount and proportion of phosphates, potash, lime, nitrogen, or whatever may be needed; the most economical form in which each may be supplied to the plant, and the intervals at which each (or several mixed) should be supplied.

I have no doubt such information would be greatly appreciated by the large number of your readers, amateur and otherwise, who make their gardening a real pleasure and study, if you can see your way to adopt my suggestion.

I must remark in closing that I was rather surprised to hear of a successful grower and exhibitor using nitrate of soda and sulphate of ammonia so often as stated, to even the strongest growers, which is, I believe, so contrary to the accepted practice. It would be useful to hear from some of our best known cultivators on this point.—J. G. MILLS.

CHRYSANTHEMUM TRADERS.

I AM not surprised that under the pressure of my recent tread some of the Chrysanthemum traders have turned. I wanted them to do so, because it enables me to say again that if there are proceedings in relation to awards of medals or other things made by the N.C.S. to which traders object, their proper course is to wash their hands of such a body, or failing that, to bring forward their complaints and objections at committee or members' meetings, and not intrude such objectionable topics into trade lists. Who of Mr. Wells' customers—and I hope he has thousands, for I heartily wish him well—cares a straw for the N.C.S. or its doings? If it wished to take a suicidal course by disgusting persons, and the members sit idly by and see it so drifting, that is their business; but it does not concern the great Chrysanthemum growing public one atom. I fear it is not only at the Aquarium that traders exhibit and obtain medals for plants or flowers, ostensibly their own, but which they did not grow. If the practice is objected to by members of the N.C.S., let them get a condition inserted that any person, trader or otherwise, exhibiting products in his name which he has not grown, at the N.C.S. shows he expelled from membership. That is the way to deal with what they may deem a grave impropriety, and far preferable to dragging such subjects into catalogues.—A. D.

YOUR correspondent, "A. D." (page 13), in dealing with this subject, seems to have got a little out of his depth. Has he any idea of the amount of expense necessary to maintain a collection of Chrysanthemums, either as a trader or private grower? I think not.

Take the example of the private grower first. Many gardeners look to the prize money to purchase new varieties, without which they have little chance of winning prizes, or even showing creditably. Does "A. D." know of the many hours an exhibitor has to work, for which he receives nothing? Love of the flower he must have, but a little of the gold that he so freely speaks of is necessary to pay the numerous expenses the competitor has to meet. In very few gardens is everything connected with exhibiting charged to the owner. Perhaps our friend has a competency, and can afford to work for nothing. If so, that is no reason why gardeners, who are generally poor men, can afford to exhibit for nothing, and pay their own expenses.

Now, as traders, all firms dealing in this particular line should have equal opportunities. We are aware that gold medals in goodly number have been awarded to exhibits, some part of which have not been grown by the exhibitor, and consequently why those who have shown what they have grown are not entitled to tell their patrons so in catalogues I cannot understand. So long as medals are given, they should go to worthy exhibits without favour. In advertising its goods, a celebrated firm shows a medal, said to have been awarded by the N.C.S. for the most complete collection in the kingdom. Did the Society ever award such a medal?—FAIRPLAY.

[We cannot imagine a N.C.S. judge risking his reputation by favouring any particular exhibitor, and if such an outrage occurred the Committee would surely purge itself of such an unworthy member. More than one or two Chrysanthemum purveyors conscientiously believe they possess the best collections in the kingdom, and if so they naturally advertise what they believe to be the fact. One thing is certain, they would not occupy commanding positions in the Chrysanthemum world if they did not advertise in some way, but only grumbled. If the classes of the N.C.S., some of which have been of undoubtedly wide scope, require alteration, pressure should be brought to bear on the Committee to alter them, but competitors are not open to reproach who act within the stipulations, and if they did not so act they would be open to disqualification.]

— PLANTING OF FRUIT TREES.—With respect to the subject matter of the paragraph taken from the "Irish Farmers' Gazette," and published on page 9 of the Journal, as to the proper depth to plant fruit trees, I can but ask whether, when budding of the stock is properly done, there is any "scar" to hide, or even to be more liable to suffer injury than other portions of the stem? Is not that nonsense? But has anyone in experience ever found the scion, if budded on the Paradise stock low down, to later, if planted below the bud union, throw out roots? I have never found such to be the case, and I think it is purely imaginary. To plant deep with such anticipation would be doubly wrong, as not only is such scion-rooting most improbable, but the variety is worked on the dwarfing stock for special reasons, and to induce the formation of scion roots would be to destroy the object aimed at in budding, and even to render the proper stock roots largely useless and inoperative. Without doubt the closer relatively that roots can be kept near the surface the better. Naturally they will seek to descend into the earth in just the same way that branches seek to ascend; but whilst in the latter case it is often our aim in the production of fruit to endeavour to make these grow rather horizontally than vertically, so have we in the case of roots to largely endeavour to counteract Nature's downward attractive force by seeking to keep them horizontally growing also; not only because the surface soil is being most aerated the sweetest, but is also the most convenient for feeding with manures, and thus supplying fruit tree needs.—A. D.

JOTTINGS.

WE sometimes talk of the busy season, but I wonder if any of us can call to mind a really good gardener who is not "busy" at all times. True there are seasons when work presses upon us in almost overwhelming force, when our energies and aptitude for management are taxed to their utmost limit; but the real secret of success in going through these ordeals is in being prepared for them by making a good start with the new year. To keep any establishment going satisfactorily little improvements have to be continually made, as each season should teach us some lessons in economic management or cultural advances. Failures of some kind or other will always occur under the best of management, and to know the cause of such is the first step toward turning failure into success. How often may we trace failures to the simple fact of making too late a start, and then pushing plants or crops, as the case may be, on too fast to make up for lost time. This applies with particular force to bedding plants; unless we have strong sturdy plants with abundance of roots by bedding-out time they can never prove satisfactory, as the season is nearly over before they become strong enough to flower freely. Bearing these things in mind it beloves us to make a special effort during the year which has just begun to have all things in readiness by the appointed time.

Although Pelargoniums are not so freely employed for bedding purposes as formerly, there is still a great demand for them, and to have the plants in good condition by the middle of May next they ought to be taken in hand at once. Those which have been rooted in thumb pots will be ready for a shift into the 3½-inch size, in which they make bedding plants of the best quality. In cases where the cuttings were placed in boxes the strongest should be potted in the same sized pots, and the weaker ones into 3-inch. The overcrowding of bedding plants in winter cannot always be avoided; the result of it usually is that they become spindly. When this happens a good plan is to cut them down to within 2 inches of the soil, insert the cuttings in small pots, and place both the cut down stock and cutting in a warm house; then if former are potted when they have made an inch of young growth, good plants can be produced by bedding-out time.

Good loam, with the addition of a fourth of leaf soil and some sharp sand, forms a suitable compost, provided the loam has been stacked at least a year; but the roots of young softwooded plants do not move freely in newly cut turf, and when they are placed in it a partial failure is often the result. I find that nothing suits them better than old Cucumber or Tomato soil which was removed from the houses last September, and placed in a heap in the open air. If this is now placed under cover, and turned a few times till it becomes fairly dry, no other addition than sharp sand is needed to render it a suitable compost for Pelargoniums, and the majority of bedding plants.

When a good stock of Lobelias is required, the work of propagating should be taken in hand at once. Raising plants from cuttings and by root division is an excellent plan to secure uniformity of growth and colour of flower; but it is not so necessary as formerly, as many notable seed firms now send out seed which produce plants with scarcely 1 per cent. of "rogues" among them. The beautiful compact-growing Emperor William should be grown by all, and of course should be increased by cuttings or division. I like to sow the seed in well-drained boxes, using light sandy soil, which is watered before sowing, the seeds having a slight sprinkling of sharp sand scattered over them. A square of glass is then placed over the box and covered with paper, before being set on a shelf in the propagating house. As the seedlings appear the glass is tilted, and the shading by degrees removed. With such treatment, and due attention given to pricking off before the young plants become crowded, large numbers of strong plants may be quickly raised from a couple of packets of seed, and there is time to still further increase the stock by dividing each clump into two or three later on.

Fuchsias are still extremely popular, being now largely employed in the flower garden, as well as for decorative use in pots. Old plants which have been resting under a stage should now be brought out. Those required principally for supplying cuttings do not need severe pruning; if the points of the shoots are removed young growths push very quickly, and a single plant will supply a great many cuttings. If, however, the plants are required to form compact bushes or shapely pyramids for flowering in 6-inch pots, they should be pruned in closely. Those for forming bushes ought to be cut down to within 3 or 4 inches of the soil, and the main shoot of the pyramids cut back to a point when the wood is strong, the side shoots being pruned to one or two eyes. As soon as young growths appear, shaking-out and repotting should be performed; then, with liberal syringings and a temperature ranging between 60° and 70°, plenty of cuttings will quickly be produced. These, if inserted as soon as ready, will make useful plants in 4-inch pots by bedding-out time, or for flowering in 5-inch pots during the summer months.

Some of the best varieties among the singles are Abundance, Lord Beaconsfield, Arabella Improved, Mr. King, Gertrude Pearson, Resplendent, Charming, Eynsford Gem, Beauty of Trowbridge, Monarch, and King of the Stripes; double, Molesworth, Mrs. E. G. Huggett, Rosalie, Sir Garnet Wolseley, White Phenomenal, and Buffon. Almost any moderately rich soil will grow Fuchsias well, provided they are potted firmly, syringed freely while growth is being made, never allowed to suffer by want of water, and, above all, receive abundance of stimulating food in the form of liquid manure and chemical fertilisers.—H. D.

PERENNIAL BORDER FLOWERS.

(Continued from page 424, last vol.)

ACONITUMS.

TRUE "old fashioned" flowers are the Aconitums, or Monkshoods, as they are popularly called, on account of the form of their blooms, resembling to some degree that of a cow. Wolf's Bane is another popular name, due to the belief that it is particularly obnoxious or destructive to that fierce animal. Nearly all the species are exceedingly poisonous, which partly accounts for the comparative disrepute in which they are held. The Monkshoods are, however, ornamental plants, which if confined to the flower garden proper will deserve the space they occupy by reason of their effective appearance in the borders. When well grown their tall spikes of flowers are very decorative. Where they are objected to because of their poisonous properties the perennial Larkspurs may be substituted.

A. Fischeri is commonly known as A. autumnale. It is a useful species, with panicles of blue-purple blooms, and grows from 3 to 4 feet high, and flowers from July onward. Regarding A. Lycoctonum there is a difference of opinion between various authorities as to the colour of the true plant. It is said by some to be yellow, and by others it is described as blue. The plant known to the writer by this name is a useful and showy flower, with stems 3 to 4 feet or more high, and with clusters of creamy yellow blooms. A. Napellus, the common Monkshood, is well known with its 4 feet high spikes of large blue flowers in summer. One of the showiest of the genus, it is also the most poisonous, and is said to be dangerous to cattle as well as to human beings if eaten. It is evident that this species, at least, should be kept out of the wild or vegetable gardens. The white variety, A. Napellus album, is a handsome plant worth growing in suitable places. A. variegatum is a pretty plant with white flowers edged with blue. It is said to grow from 1 to 6 feet high, but I have never seen it less than 3 feet. Other good Aconitums are A. Anthora, yellow, and A. paniculatum, blue.

The Monkshoods will grow in almost any good garden soil; but their display is increased if it is rich, and not allowed to become too dry. They are remarkably good plants for planting in shade or under trees. They are increased by seeds or division.

ACTÆAS.

Berried plants are often prized in the garden, and one generally finds that those of the Baneberry are appreciated. These berries are, however, poisonous, so that it will be safer to omit the Actæas from gardens where children have free ingress. This fault, notwithstanding, they will be found valuable in shady places. There are only some two species in cultivation in this country. The flowers are of comparatively little effect, and are arranged in racemes. They are white in the plants in cultivation. A. alba flowers in May or June, and has white berries in racemes. The leaves, like those of A. spicata, bear some resemblance to those of the Elder, whence it is said the name Actæa, from aktaia—the Elder. It grows from 1 to 1½ foot high.

A. spicata is the better known species; but the type, which has black berries, is inferior in merit to A. spicata rubra, which has exceedingly bright wax-like red berries in clusters held well above the plant. With the writer this seems to prefer a peaty soil, in which it flowers and bears berries with the utmost freedom, although in the shade of a tree. Both these species come from North America, and may be propagated by seeds or division. Like many berried seeds, it may be some time before the seedlings appear above the surface.

ACTINELLAS.

Two plants under this name are included in the Kew "Hand-list," but of these the better is A. grandiflora, a flower more suitable for the rock garden than the border. It comes from Colorado, and grows from 6 to 9 inches high. The flowers, which are yellow, are about 3 inches across, and much resemble those of many other yellow composites. In damp districts A. grandiflora does not always survive a wet winter. A light dry soil should be prepared for this plant, with ample drainage.

ACTINOMERIS.

Several plants bearing this formidable name are described in works of reference, but are seldom seen. The only one the writer has yet come across is A. squarrosa, which he has seen in two or three gardens, and which is the only species in the Kew Gardens. It is not a plant he cares for, but to those who wish a large collection of yellow composites it may be of interest. The flowers rather resemble those of the Coreopsis, and are in loose panicles at the ends of the winged square stems. It has rather broad lance-shaped leaves, which are well described as coarsely toothed. A. squarrosa grows from 3 to 4 feet high, and may be grown in any ordinary soil in a sunny position. It may be increased by seeds or division.—S. ARNOTT.

(To be continued.)



THE NATIONAL ROSE SOCIETY.

IN reading the report (page 460, last vol.) of the general meeting of the above Society, the proposed alteration of the size of boxes struck me as being rather uncalled for, and more especially if an exhibitor is to be disqualified if his box or boxes are 1 inch too small, or that much more than the proposed alteration. I dare venture to say that eight exhibitors out of ten would have to overhaul his boxes; in fact, I think it would be cheaper to have new ones, as it would cost nearly as much, if not quite, for the alteration. Fancy the expense it would entail! How many members are there who would entertain such an unnecessary sacrifice? In my opinion there are many who would rather withdraw from the Society altogether, especially if it is extended to the classes for twelves, nines, and sixes.

I fail to understand why so sweeping a change is to be made. Matters have appeared to go on without any complaints—in fact, I have heard none whatever—and I think as the present regulation has been satisfactory to the majority for so many years it is unnecessary to have it altered now for the gratification of a few. Further, I think this is a question not to be settled by the Committee only; in a question of pounds, shillings, and pence every member, in my opinion, ought to have a voice in its settlement.—W. M.

BROWNING OR "BRUNURE."

IN reply to "A. B.," I may say that the disease known as browning, or "brunure," appears on the young shoots of Vines, causing the half-grown foliage to contract at the margin and become cup-shaped, then the stem loses its clear substance, assuming a dull appearance with lines of shrinkage. The tips of the shoots become flaccid, effete, and the young wood turns to a dirty black tint. The growth is arrested, and the points of the shoots collapse, often in the case of vigorous Vines to the extent of a foot or more. It is commonest on young Vines, and affects those in the most robust growth, and with the roots healthy. No charge can be made against the management, as it appears under the best cultural conditions.

Close observation clearly indicates that certain nutrients at the command of the Vine are in excess, and possibly deficiency of other counterbalancing elements lead to that condition favourable to the attack and development of parasitic growth. This I find to be a slime fungus, so called, though there is no jelly-like matter, but a dry gangrene, and the organism leading a life almost analogous with the "bacteroids" that aid leguminous plants to "fix" atmospheric nitrogen in their tissues, still forming spores and developing from so-called zoospores, but amœba-like bodies, into plasmodia—a Myxomycetes, to wit Pseudo-commis vitis.

Practical experience has taught me that this particular parasite attacks plants most that are grown in alluvial soils, or those made rich in organic matter by animal or vegetable substances. In the case of Vine borders or composts for Vines there is the soil itself—turf, rich from the decay of vegetation, and in many cases of a vegetable nature. The turf rapidly decomposes when cut, and organic acids are produced abundantly. To counteract these lime rubbish, wood ashes, burnt refuse, and charcoal are mixed with the turf. Some growers employ calcareous loam, especially of the "red" class, including lime in an available form, and a due admixture of iron in the ammoniated state. The late Mr. W. Thomson, in his book on Vines, lays stress on red soils for the Grape Vine, and his brother, Mr. D. Thomson, in last week's *Journal of Horticulture*, recommends calcareous loam for Peach borders. In neither case have I noticed "blacks" in Vine shoots or undue grossness in Peach growths when the loam has not been spoiled by heavy dressings of leaf mould or manure.

To the Vines in question I should apply a dressing of basic slag phosphate—I use the term "phosphate," because some "slags" are worse than useless, from not being properly prepared for fertilising use—at the rate of 1 lb. per square yard, and point this into the soil as deeply as the roots of the Vines will allow, mixing as evenly as possible. Afterwards follow with 4 ozs. of kainit per square yard, and leave this on the surface, for it will disappear fast enough, and if pointed in might, with the lime, form chloride of lime, and injure the young rootlets. This has given the best results with me, sulphates being avoided, especially in the form of superphosphates, for sulphuric acid seems to favour "blacks." If a quickly acting form of potash were used, muriate would be most disastrous to the parasite on account of the chlorine, whilst lime corrects any sourness, and converts, by the agency of micro-organisms, the organic matter into nitrates, especially of lime—the element needed in available form in the soil, to be taken up by the roots into the Vines.—G. ABBEY.

OLDFIELD NURSERIES.

MESSRS. W. CLIBRAN & SON, Altrincham, are to be commended for the interest they afford to visitors in their endeavours to show the varied stock to perfection, and of the unfailing courtesy extended.

Though Chrysanthemums are grown principally as cut flowers to supply the demand for wreaths and other floral designs, yet the firm is alive to the fact that to meet the requirements of all, large blooms are indispensable, and Mr. Fletcher, the grower, has everything old and new, and the 6000 pots of various varieties make a wonderful display. The firm is introducing some seedlings of both Japanese and incurved that should become very popular. At the time of my visit single varieties were charming, and a greater future for these may be safely predicted. The shades of colour in the newer seedlings are really remarkable, and beyond the possibility of description here. The houses cover some 6 acres, all finely stocked with healthy produce, pot Roses well ripened forming a great feature. The Cyclamen houses arrest attention, and show that the firm is in the forefront in every way.

The deciduous trees had entered their winter sleep, but the falling leaves of the Ampelopsis and Maples gave tokens of the rich autumnal colouring that had been. Robust health is always attractive, and the vigour of the Ivies, shrubs, and Conifers should stimulate every enthusiastic gardener. Ample space is allowed for each tree or shrub to develop naturally, and with careful lifting every two or three years excessive root growth is checked and the development of fibre encouraged. An assortment of some 40,000 Ivies in and out of pots, formed a feature amongst climbing plants, the Irish Ivy being conspicuous; but Emerald Gem, Caenwoodensis, and gracilis were also noticed.

Many thousands of Honeysuckles, Ampelopsis, and Clematis gave evidence of the great demand for these deservedly popular plants. Hollies and hybrid Rhododendrons form specialities in the Oldfield Nurseries—that is, if one may judge from the acres of the latter and the many thousands of grand bush and pyramidal specimens of the former.

About two miles to the east of the Oldfield Nurseries lies the Hale Farm Nursery, chiefly devoted to fruit trees, of which there are about 40 acres. Seedling and transplanted forest trees occupy over 50 acres, whilst Conifers account for a further twenty. As this nursery is on high exposed land without shelter the trees are grown under the severest conditions, and look proportionately vigorous. The fruit trees with their smooth bark, short sturdy joints, and fibrous roots, showed promise of the highest success. We could not help noticing the care and attention exercised in the spraying of fruit and forest trees to prevent the ravages of injurious insects and fungi.

Much ground still remained to be inspected; but the shades of a short December day came quickly, and the train conveyed us from this interesting establishment into the smoke and din of the Manchester streets.—A VISITOR.

WALDSTEINIA TRIFOLIA.

THIS, "J. W. W.," is by no means a new plant, having been introduced to this country many years ago, though it is by no means so widely known as it ought to be. For planting, either in exposed places on the rockery, or in the deep shade of woods, it will be found very useful, as it grows in both equally well. It is also a very desirable plant for a place near the front of a mixed flower border. It is dwarf in habit, seldom attaining more than a foot in height. The loose corymbs of Buttercup-cup-like flowers are very attractive, and are developed profusely. The leaves, which are divided into three leaflets, are borne on creeping chiefly underground stems; they are slightly hairy and serrated at the margins.

THE MICROSCOPE IN THE GARDEN.

IT is because I have so seldom met with a gardener who possesses a microscope, that I am prompted to write a few words on its value. It has often astonished me too to meet with so few young gardeners who have even looked through a microscope. One can hardly realise it to be true in these progressive days, yet the fact must be admitted. I think if the real worth of a microscope in the hands of a gardener were more generally known, it would soon become as essential as the case of drawing instruments, which some are so proud to possess.

It is not an instrument that can only be brought into practical use at certain seasons of the year, but almost every day. To me there is always something fresh to see, therefore to learn, in connection with plant life, which without the aid of the microscope must have remained unknown. Neither does it compel us to spend a large sum to acquire a knowledge of its manipulation, as do some of our hobbies. For a few shillings a book may be purchased giving details of each part of the microscope, the purpose it fulfils, and the way it is manipulated to the best advantage. So I hope young gardeners will not think that a great outlay is necessary.

We not only gain valuable information by its aid, but a great amount of interest. Especially during the winter months do we realise this, for as gardeners we have not far to seek for objects, either in the insect or vegetable kingdom, and with a little dissecting and slicing we can make objects a wonder to behold without any special preparation, except in the

case of plant sections, when a drop of clear water on the object enables the cell wall to be better seen. We are, then, by the aid of the microscope better able to understand how a plant is constructed; the form the separate organs take; how they are placed so as to contribute a greater amount of strength to the plant; how air is conveyed through the leaves and stem; and how the whole fabric of a plant is built up.

In addition to revealing to us the hidden wonders of plant life, with which all gardeners ought to be familiar, it reveals many secrets of the cause of the diseased portions of plants, which we are all anxious to ascertain if we have a sickly plant. Take, for instance, the Eucharis: it is ten to one if our plants appear to be going wrong there is a very minute insect attacking it somewhere, probably in the bulb, but sometimes in the leafstalk; it is hardly discernible with the naked eye, being so tiny, and somewhat the colour of the bulb, but with a lens numbers of them may be seen feeding. Another of these minute insect pests is the



FIG. 11.—WALDSTEINIA TRIFOLIA.

devastating red spider. Almost invisible to the unaided eye, yet they are endowed with such power of increase, that unless checked they soon spread to an alarming extent. This pest prefers the under surfaces of leaves, where they are less readily detected, thus gaining a firm hold before means are used for their extirpation. And one might go on enumerating microscopic insect pests, so detrimental to plant life and a great annoyance to the gardener. But sufficient (as regards insect pests) for my present purpose have been enumerated.

I will, however, mention one or two fungus pests that are best understood by the aid of the microscope. The ever dreaded mildew, that has played such havoc with some of our choicest Chrysanthemums in the past season, stands prominent in my mind. In reality this is very different to what it looks. To the naked eye it has the appearance of very fine white or rather grey dust distributed over the leaves and stems in patches. But when we peer more closely into it by the aid of the microscope of a moderate power, say of 100 diameters, a great contrast is beheld. Instead of seeing dust, as it before appeared, we see perfect plants, so minute and in such numbers that one is struck with amazement. This fungoid disease is one of the worst pests we have attacking the Chrysanthemum. Smut-blight of Wheat, which farmers are so familiar with in their fields, is a fungus of black colour that often entirely covers the young ears, like a coating of soot, completely destroying the grain. The spores of this fungus are so exceedingly small that nearly 8,000,000 of them would be required to cover a square inch of space. Then, too, they are so light that they sail about in air, and are thus brought into contact with other of their favourite hosts, on which they soon work their spell of mischief. Descriptions of other microscopic pests will serve for a future article.

It has been my sole desire in the present article to give a little idea of the usefulness of the microscope in the garden. If I have created an interest for this branch of study, especially among the rising generation, my desire will be gratified.—ASPIRANT.

THE YOUNG GARDENERS' DOMAIN.

THE CULTURE OF FOLIAGE PLANTS.

(Concluded from page 35.)

CALADIUMS.—These plants should find a place in every collection on account of their sterling qualities for house or conservatory decoration, whilst their value to exhibitors is too well known to need comment. They should be started in March or April in small pots, and when advancing, be placed in whatever sized receptacle circumstances demand. They are moisture-loving plants, and care must be given to keep them well supplied with water at the root and in the atmosphere, when elegant, well-coloured foliage, will repay the cultivator for his care. A similar compost to that mentioned for Crotons will suit Caladiums admirably.

COLEUS AND ACALYPHAS.—To grow these useful plants to perfection abundance of warmth, light, and moisture are essential, but they may be produced with a certain amount of success in different circumstances. Some cultivators have them constantly in strong heat, while others, after starting them in heat, inure them to cooler quarters, and place them in the conservatory or greenhouse. Several of the hardier varieties are utilised with excellent effect in summer bedding.

FERNS.—No foliage plants are more admired than Ferns. To attempt to describe their characteristics here would take up too much space. The chief points in their cultivation are moisture, shade, and not too frequent potting. The usefulness of Ferns is too apparent to need any remarks being passed on the subject; indeed floral work would be at a standstill without their aid.

PALMS.—Both hardy and tender Palms are useful and elegant. I saw a splendid specimen of *Livistona australis* in the gardens of Sir George Meyrick, Bart., Anglesea, planted in the shrubbery, where it stands the variable winters without any serious damage to the foliage. Other kinds may be used for subtropical bedding, affording them a greenhouse temperature during the winter. *Lantana borbonica*, *Seafortia elegans*, *Kentia Belmoreana*, are suitable varieties for these conditions. *Cocos Weddeliana* and *Geonoma gracilis* require a warmer temperature. Too frequent potting is inadvisable with Palms, and a watering with soot water will materially assist to keep the foliage a dark green colour.

REX BEGONIAS.—The curiously shaped, handsomely marbled foliage, of Rex Begonias add colour to many places where other plants will not thrive. They are in no way partial to high culture; in fact they do well on walls, a block of turf being pressed against the roots and secured by wire. As rockwork plants their value is well known.

ASPIDISTRA LURIDA.—This plant is grown in some places in preference to any other, and it certainly deserves all the attention given, as no other will stand the diverse conditions it has at times to undergo. The majority of plants would succumb where it seems to thrive best. The compost should be rather poor, such as ordinary loam, leaf soil, broken sandstone, and sifted lime rubble. After potting, keep the plants in a warm temperature for a short time, until the roots are on the move, when they may be used for the adornment of the conservatory, house, or terrace.

Mention might be made of a host of other foliage plants, but I have confined myself to those in general cultivation.—E. J. B.

EUPHORBIA JACQUINIEFLORA.

As a winter flowering plant for the stove this is worthy of every attention, as it is a free grower and extremely floriferous, while for decorative purposes it is indispensable, the flowers lasting a long time on the plant or in a cut state. The long wreath-like sprays of intense scarlet flowers make the plants very effective when grouped with foliage plants.

They are more easily grown, perhaps, than some of the junior "Domainites" are aware. Cuttings taken in the spring, with a heel of the old wood attached, and inserted in light sandy compost round the sides of a 60-pot, will root readily if placed in a temperature of 70°, kept close and moist, never allowing them to flag. When well rooted put them in suitable pots singly, or two or three as the case may be, using a compost of three parts fibrous loam to one of sandy peat, with a fair amount of silver sand and charcoal. Drain the pots well, and take great care in watering, especially after potting. Afford a day temperature of 80° with sun heat, when a little air must be admitted. Syringe on closing, which should be done early so as to raise the temperature to 85° or more, and keep them well up to the light, shading when necessary. The plants ought to be in their flowering pots by the end of June. When thoroughly established they may receive a weak stimulant twice a week. Admit more air, and reduce the heat and moisture gradually, which will tend to ripen the growth.

After flowering it is the custom with some growers to rest them, as is the case with Poinsettias, but considering that a second crop of flowers can easily be obtained I consider it a loss to do so. When the first blooms are cut we allow them to become somewhat dry, till they show signs of breaking, then with careful watering and frequent syringing they soon make growth, which we encourage with some approved chemical manure. Of course the sprays are not so fine as those first produced, but they are most useful for buttonholes and small glasses for the table.

At the back of our stove, which is a lean-to structure, there remains what originally was a flue, by which the house used to be heated. It is now filled in with old potting soil and planted with various plants, chiefly Ferns and Euphorbias. Some of the latter are several years old, and

were originally in pots, and had after flowering been planted out. The back wall is covered with *Ficus repens*, and to this the growths of *Euphorbia* are loosely tied. The distance from where they are planted to the roof is about 7 feet, and many of the leading growths are in proximity to the glass, thereby receiving plenty of light, which insures flowers of splendid colour. On one plant alone there are forty sprays, not a few measuring from 6 to 9 inches in length.

Beyond the tying and an abundant supply of water at all times, which is needed for the benefit of the Ferns, they have no other attention. When any of the plants die we replace in the spring with those that have previously flowered in pots, and in this way we keep our stove wall gay with one of the best winter flowering plants in cultivation, and that with very little expense.—PARVO.



HARDY FRUIT GARDEN.

Raspberries.—Prune away close to the base the old dead canes of Raspberries and thin out the new canes, leaving the most vigorous, though not more than four or five strong growths to each stool. These, when tied in, may be shortened to the height of the stakes or trellises on which they are trained. The removal of strong weeds with the fork from the soil may follow. The central space between the plants not occupied with fibrous roots ought to be forked up or loosened, if heavy or trodden down hard, but by no means dig in close proximity to the stools, which are plentifully furnished with a mass of fibrous roots close to the surface. Mulching with a layer of rich manure is of the greatest assistance in the culture of Raspberries. The present is a good time to apply a dressing. Liquid manure may also be freely applied to established plants.

Planting and Pruning Young Plants.—New plantations can be formed at this season if strong suckers are procurable, well furnished with fibrous roots. Well worked and liberally enriched soil must be prepared for Raspberry planting. Trenching, or bastard trenching, the ground is the best method of preparation, adding well decayed manure between the spits.

If planting in rows, place the plants a foot apart. In clumps, three plants may be planted in a triangle a foot apart round a central stake 5 feet high. In rows, train the canes to wires stretched between stout uprights of wood or iron fixed firmly at each end.

All newly planted Raspberries should be cut down to within 9 inches of the base, the weaker and insufficiently rooted canes being cut down close to the soil, while those better furnished with roots may be left longest. This close pruning prevents the plants fruiting the first year, but it affords an opportunity for strong, vigorous growth to be made, producing canes which will fruit well the succeeding season. After planting a mulching of light manure might with advantage be spread on the soil between the plants. Good varieties of Raspberries are Superlative, Baumforth's Seedling, Prince of Wales, Carter's Champion, and Red Antwerp.

Pruning and Training Morello Cherries.—These Cherries, grown with free extension on north and other walls, are very productive and profitable if judiciously managed. Plenty of growth is usually made by them, and there is frequently considerable difficulty in laying it all in to the walls or trellises without crowding. The wood is slender in character, and is usually retained and laid in closer than desirable for other wall trees. Fruit is produced best on young shoots of the previous year, and as many of these as possible ought to be reserved, cutting out the old bearing wood when practicable. In some cases old exhausted branches may be cut out entirely and replaced with young wood; indeed the frequent re-arrangement of the whole trees is beneficial. The young bearing shoots must not be laid in closer than 3 or 4 inches. Spur pruning is sometimes wholly or partially adopted, the latter being admissible in treating young shoots for which there is no room, shortening them to form spurs. After the removal of superfluous wood the remainder may be washed with an insecticide, also the walls.

Planting Bush Fruit.—When the ground is in suitable condition Gooseberries and Currants may be planted at the present time. The soil ought to be well prepared by thorough digging and working in some decomposed manure. Plants of two or three years' growth will be found the most suitable. They should not be planted closer than 6 feet either between the plants or rows. Spread out the roots to their fullest extent, shortening long rambling ones back. Cover with good soil distributed from the stem outwards. Do not plant deeply, but make the soil firm about the roots, and finish with a mulch of short light manure. Prune back somewhat closely, so that free growth may be made during the forthcoming season.

Top-Dressing Bush Fruit.—Established bushes of Gooseberries, Red White, and Black Currants will be benefited by a liberal dressing of rich manure over the roots. The most suitable is that to be obtained from the farmyard. This is a mixture of many kinds, rich in plant food elements. It may be placed on the surface, and allowed to remain while the virtues

in the manure are washed down to the roots by rain. Soot is an excellent fertiliser, and may, with great advantage, be dusted freely over Gooseberry and Currant trees as a deterrent against small birds attacking the buds. It also may be applied to the soil over the roots. In short, it protects the buds, cleanses the wood, and fertilises the roots.

Strawberries.—The necessary clearance of weeds, runners, and dead foliage from Strawberry quarters ought to be effected at once if such work has not been done. The soil between the rows must not be disturbed except lightly pointing up the centres. Then spread a good coating of rich manure over the entire space.

Young recently planted Strawberries will not require manuring, but the surface of the soil must be frequently hoed during dry weather for the purpose of keeping down weeds, and promoting the growth of the plants.

FRUIT FORCING.

Cherry House.—Give due attention to watering trees in pots and syringing on fine days, damping occasionally only when the weather is dull. Maintain the night temperature at 40°, 45° to 50° in the daytime by artificial means, ventilating at 50°, and allowing a rise of 10° to 15° from sun heat, with full ventilation, closing at 50°. Scrutinise the trees closely for aphides, and if there be trace of any take measures at once to eradicate them.

Cucumbers.—Maintain a night temperature of 65°, 70° in mild weather and 60° on cold nights, 70° to 75° by day, and 80° to 85° with sun heat. When the external air is mild a little ventilation may be given at 80°, closing before the temperature is reduced below that degree, so as to raise it to 90° to 95°, but if the external air is cold, although the sun shines, it is better to allow the temperature to advance a little beyond the above limits than to admit cold air, which injures the foliage, also causing the fruit to become stunted and to curl at the end. Plants in bearing will require to be examined about twice a week, removing all weakly, superfluous, and exhausted growths, reserving such of the bearing wood as carries young shoots to fill the allotted space, stopping the shoots above, or two joints beyond the show for fruit.

Young plants that have passed the winter so far in fairly good health will make better progress now the days are getting longer and brighter. They are greatly assisted by removing the staminate blossoms, also superfluous pistillate flowers as they appear. Tendrils should also be pinched off. The supply of moisture both at the roots and in the atmosphere must be regulated by circumstances and external conditions. Syringing should not be practised on the foliage, except a light sprinkling in the early part of bright afternoons, damping the floor moderately at about 8 A.M. and 2 P.M. Encourage the roots to spread on the surface of the bed by adding lumpy manure from time to time, with which may be incorporated a little well decomposed cow manure or fresh sweetened horse droppings. When roots are had in this manner the plants may be fed to any extent by sprinkling a mixture of five parts bone superphosphate and two parts powdered nitrate of potash on the surface, at the rate of 2 or 3 ozs. per square yard every fortnight or three weeks, with a light dusting of soot between times.

Keep a keen eye on the plants for their worst enemies—mildew, red spider, and white fly, and paint the hot-water pipes with a cream formed of it and skim milk. The fumes given off will kill white fly and mildew, also red spider. Canker is also unusually prevalent; freshly burned lime, powdered, or slaked with the smallest amount of water necessary, rubbed into the affected parts, will arrest its progress. Aphides are very pernicious, arresting the growth and spoiling the crop. Fumigate several times moderately, and on consecutive evenings, rather than once severely. We find that a dose in the evening and another early the following morning answers the best. Thrips also succumb to fumigation, and mealy bug to vaporisation with nicotine essence. Care must be taken in either case not to give an overdose.

Peaches and Nectarines.—*Earliest Forced Trees.*—Continue to fertilise the blossoms, using a camel's hair brush, feather, or rabbit's tail mounted on a small stick; these are better than shaking the trellis. When the fruit is well set, syringe the trees occasionally in the morning or early part of fine afternoons to assist easting off the remains of the flowers. In bright weather syringing must be practised in the morning and afternoon, but, when dull, have recourse to it in the morning, this and damping the house in the afternoon being sufficient. The water employed must be of the same temperature as that of the house, and the inside border should be duly supplied with it. Disbudding will soon have to be attended to, but it must be done with discretion at this early season, it being better to remove a few shoots daily from a tree than many at a time at distant intervals. The night temperature may now be maintained at 55° to 60° on mild nights, 60° to 65° by day, 5° less as the minimum when the weather is severe and dull, admitting a little at 65°, not allowing an advance over 70° without full ventilation, always excepting a little left at the top of the house constantly.

Second Early Forced Trees.—When the blossoms show colour on the trees started at the new year syringing must cease, but the paths and borders should be damped in the morning and afternoon, except in dull cold weather. Supply water as necessary to keep the border in a thoroughly moist state. Keep a sharp look out for aphides. If there be any fumigate the house on two or three consecutive evenings moderately, which will be sufficient to keep the pests under until the fruit is set. In case of an excess of blossom buds—and they are abundant this season, though many are being cast in some cases, also promising—draw the hand the contrary way of the growth along the under side or back of the

trellis, so as to reduce the number of bloom buds, which will increase the vigour of those left and best situated, therewith tending to a more even and better swelling of the fruit after setting.

Succession Houses.—Push forward the pruning of the trees, dressing the trees with an insecticide, and readjusting them to the trellis, leaving plenty of room in the ligature for the swelling of the branches. The surface of the border may be pointed over with a fork, but not disturbing the roots, the loose soil removed, and fresh loam supplied, sprinkling on it 4 ozs. of basic slag phosphate per square yard. This is particularly valuable on account of the lime it contains, as well as phosphorus, phosphoric acid being slowly yielded to the soil and imbibed by the roots with the water, for Peaches and all stone fruits, especially where the soil is of a rich close nature, full of vegetable matter or humus. In other cases steamed bonemeal, five parts, and double sulphate of potash and magnesia, two parts, mixed, 4 ozs. per square yard, may be applied with advantage. The dressing should be lightly pointed in. In the case of basic slag being used supply also 2 ozs. of the double sulphate of potash and soda per square yard. If the borders are at all dry they should be given a thorough watering. Houses, however, that have movable roof-lights, and these being off, will not require any water, the soil being thoroughly moist. The shoots also are kept in a condition by the air moisture unfavourable to evaporation, so that the trees not only have thorough rest, but the buds are prevented falling.

THE BEE-KEEPER.

ATTENTION TO FLOOR BOARDS.

It is not only in the summer months, but during the short days of winter that the convenience of having loose floor boards is felt by those who are responsible for their management. One has only to examine a hive after it has been exposed to a long spell of dull, wet weather to be convinced that it is beneficial to the bees to have dry floor boards given them when necessary. If it is a fixture there are no means of cleaning them at this season without disturbing the bees.

With movable floor boards the case is very different, as a clean dry floor board may be given at any time without the bees being disturbed in the least. The plan we recommend is to have a few spare boards, and if the hives are all of the same size it saves the bee-keeper much trouble, as all that is necessary is to place one of them by the hive, which may be lifted, and at once placed on the dry board. The same operation can be carried out with the other stocks so long as the dry boards last.

The boards that have been removed are cleaned, dried, and afterwards used again. Several stocks may be done in the course of a few minutes, and it is only reasonable to suppose that colonies of bees treated in this manner will come out stronger and better in the spring than they would had a large amount of *débris* and moisture been allowed to accumulate throughout the winter. A hive may be well made, but more often than otherwise it will be found that moisture accumulates in the corners; this will soon cause the boards to decay, and leave them in an unsatisfactory condition.

EXAMINATION OF STOCKS.

It is advisable at this season when removing the floor boards to make an examination of all the colonies to ascertain if they are short of stores and otherwise in good condition. The bees need not be disturbed in carrying out this operation. We can usually tell if there are ample stores in the hive by lifting up the back of the hive with one hand. If there is any doubt in the matter, carefully remove the outer coverings, and then roll back the quilt so as to expose the outside combs. The bees will usually be found clustered in the middle of the hive, and the combs on each side should contain sealed stores. The outside combs in the hive are always the first to be cleared of their stores in the autumn before cold weather sets in. The natural instinct of the bees has taught them that their food supply must be conveniently near them when they cluster during the dull, cold days of winter.

The plan we have adopted this season with colonies in ordinary frame hives is to remove all the frames outside the cluster that have been cleared of their stores, and replace them with full frames of sealed honey, as, owing to the honeydew, a great quantity of this remained on hand. The sides of the combs nearest the bees were slightly bruised, so that the bees commenced to feed at once. If frames of stores are not available feed with candy as advised in previous notes. If the coverings have become damp they should be dried before being used again. A mild day must be chosen for the necessary examination.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Barr & Sons, King Street, Covent Garden.—*Seed Guide*.
 E. Calvat, Grenoble, France.—*Chrysanthemums*.
 Dicksons & Co., Waterloo Place, Edinburgh.—*Seeds*.
 W. Fromow & Sons, Chiswick.—*Seeds*.
 Harrison & Sons, Leicester.—*Seeds*.
 A. Hart & Sons, High Street, Guildford.—*Seeds*.
 W. B. Hartland, Cork.—*Seeds*.
 Hogg & Robertson, Dublin.—*Seeds*.
 W. Horne, Cliffe, Rochester, Kent.—*Fruit Trees*.
 Kelway & Son, Langport.—*Manual for 1899*.
 J. R. Pearson & Son, Chilwell, Notts.—*Seeds*.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Browning or Brunure in Vines (A. B.).—On page 52 you will find an article from Mr. G. Abbey on browning. We trust the information given therein will assist you in exterminating the enemy.

Books (Bookie).—If you do not possess a book of reference you will find Johnson's "Gardeners' Dictionary" useful. It includes a great amount of information, including much of a practical kind. It can be obtained [from a bookseller for 9s., or post free from the publisher, 12, Mitre Court Chambers, Fleet Street, London, on receipt of 9s. 6d. If you prefer a work on vegetables the most complete is Vilmorin's "Vegetable Garden," with cultural notes by Mr. A. F. Barron. It is published by Mr. John Murray, Albemarle Street. We do not know the price, but it would not much exceed the amount at your disposal. You must now choose for yourself. Your other question shall have attention.

Small Black Ants (Subscriber).—These little creatures are troublesome in pots and care little about water or liquid manure. Place a piece of camphor about the size of a Filbert in half a gallon of boiling water, and when cooled to 110°-115° apply to the infested pots. Some plants will not bear water so hot, therefore use judgment in applying to very tender rooted kinds. Guano water also acts well, while Fir tree oil certainly kills the active animals. We have used this insecticide for ejecting into the haunts of the ants in woodwork and brickwork, and always with excellent effect. Lemon oil also proved efficacious, following the instructions as to dilution. For poisoning see answer to "J. S." in last week's issue of *Journal of Horticulture*, page 33.

Blotches on Leaves of "Greens" (Man of Kent).—The concentric discoloured patches on the leaves are due to the action of a parasitic fungus, closely resembling, but distinct from, the Violet leaf spot fungus, *Peronospora violæ*, which has been prevalent this season. There is no conidial form of the parasite, but the resting spores on the dead tissue are abundant and coincide with *Peronospora parasitica*, Pers., of which one form is peculiar to the Cabbage family. The fungus is an endophyte, and no external application is of any use other than to prevent the spread of the disease. We have found the best preventive dusting with quicklime, using as lightly as possible, and repeating occasionally, the lime being strewn with the hand as near the ground as possible, so as to dash it against the under side of the leaves, and working up and down the rows and on both sides of them. It should be applied when the plants are dry, always lightly and, as before stated, frequently. * will do the land good as well as the plants.

Treatment of Adiantums (Amateur).—Plants from which fronds have been gathered, and only small remains, may be cut over and started again into growth. If placed in a temperature of 55° to 60° they will soon commence pushing up new fronds, when they should be repotted without delay. If the plants need larger pots remove the drainage and any roots that may be crowded about the crooks; the remainder of the ball can be placed in the new pot without disturbance. If the plants are in pots large enough they may be divided by cutting them straight through the middle; the drainage should be removed and the plants potted without disturbing them further. The soil, which should consist of equal portions of good loam and leaf mould, with the addition of sand, must be pressed firmly into the pots. If the plants have been infested with small slugs thoroughly dust the crowns with soot. This will drive them out, and they can be picked off a short time afterwards. Continue this practice until the plants are perfectly free from these pests. A small white caterpillar-like grub occasionally infests Adiantums, and feeds upon the crowns and young fronds just as they form to such an extent that seldom a perfect frond is allowed to develop. These can only be destroyed by thoroughly shaking away from the plants every particle of soil, when they roll out and can be destroyed. The best means of stamping them out is to burn any infested plants. After potting, stand the plants on a moisture-holding base and syringe freely amongst the pots. Very little water will be needed until the plants commence to grow.

Various Plants (J. C. S.).—Peperomias or Pepper Elders belong to the same natural order as the Peppers—namely, Piperaceæ. They are interesting, small-growing, ornamental-leaved plants, suitable for culture in pots: some of the species that are of trailing habit are also well adapted for hanging baskets. These plants must have a stove temperature, but are excellent for temporary decoration indoors, as their stout succulent leaves enable them to stand the change from the stove to the sitting-room. They do well in fibrous peat and loam, with some silver sand. In winter they cannot have too much light, but summer shade from sunshine is requisite. They do not require so much water as many stove plants. *Cypripedium spectabile* has light bright green leaves, furnished with soft downy white hairs, and produces large flowers, the pure white sepals and petals being broadly ovate, and not longer than the lip, whilst the large pouch, which is of a beautiful soft rose colour, is very much inflated. It flowers in June, and may be grown successfully either in a pot or in the open border, thriving well in the shady part of a Rhododendron bed. The plant thrives in a compost of equal parts good peat and friable loam, with a fourth of thoroughly decayed leaf mould, and a sixth of sharp silver sand. It requires to be kept cool and moist in the summer months, and from frost in the winter. Pimeleas are compact, free-growing greenhouse plants that flower when other hardwooded representatives are past. They succeed in firm fibrous peat and silver sand, and should be given a light airy position. You need not hesitate to ask for information at any time on anything in gardening, as we are always pleased to advise according to our ability.

Fertilisers for Onions (E. R. S. J.).—1, We do not consider common salt a necessity for the production of a good crop of Onions where the ground has been liberally dressed with foldyard manure, night soil, and wood ashes, as the last named will supply potash and lime, and the animal manure soda, chlorine, and fluorine. In some cases the salt acts well, counteracting the tendency to produce too much top, especially when the manure dressing is somewhat fresh and the soil of an open nature or light. 2, In the latter case supply the salt as soon as possible, or some time in advance of sowing, disposing evenly on the surface and leaving there. Five cwt. per acre, or 3½ lbs. per rod, is a full dressing, but usually half the quantity is applied. 3, Bonemeal, at least phosphoric acid, is a necessary element for Onions. Superphosphate acts more promptly, and is the article for a heavy soil, using 2½ cwt. per acre, 1½ lb. per rod. It tends to early maturity of crop, which is often backward on heavy land. Limestone soils need less than other land, as they are usually relatively rich in phosphoric acid. 4, Nitrate of soda must be used very cautiously on Onions. If given too soon the plants produce splendid tops and thick-necked bulbs, therefore let them begin to bulb, and then supply 2½ cwt. per acre, 1½ lb. per rod, having it crushed very fine, and using when the plants are dry. Repeat with half the above quantity, when the bulbs are about a quarter grown, and again still lighter when they are half grown. It is better to mix the nitrate with dry earth to insure even distribution and prevent injury to the tops. 5, Bonemeal does not lie long in a limestone soil without being of service. That applied now will give something by the end of April or before, the micro-organisms in the soil seizing the ammonia, or the base with which it combines, and work it up into nitrate of lime. Thus applied in autumn or early in spring it supplies nourishment to the following summer crop, and so on for some years.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The

names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. *Dessert Pears cannot be named in a hard green state.* (S. H.).—1, Knight's Monarch; 2, Easter Beurré; 3, Gloria Mundi; 4, Dutch Mignonne. (J. Smith).—1, Stamford Pippin; 2, Red Winter Calville; 3, Mère de Ménage; 4, Northern Greening; 5, Bramley's Seedling; 6, Dumelow's Seedling (Wellington). (F. D.).—1, Glou Morceau; 2, unknown and worthless; 3, Bess Pool. (G. W.).—1, Cobham; 2, Golden Reinette; 3, Alfriston; 4, Golden Winter Pearmain. (J. H. K.).—The variety is Cox's Orange Pippin, the result no doubt of a graft or bud which had been inserted in the tree. The Apples had either been gathered too soon or kept in too dry a place.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (M. P. N.).—1, Phoenix dactylifera; 2, P. rupicola; 3, Kentia Belmoreana; 4, K. Canburyana; 5, Geonoma gracilis; 6, Cocos Weddeliana. (F. A.).—1, Maranta Veitchi; 2, Phrynium variegatum; 3, Phormium tenax. (H. R. J.).—1, Begonia metallica; 2, B. nitida; 3, B. Ingrami; 4, B. manicata. (R. C. W.).—Freesia refracta alba. The Fern is an Asplenium, but the specimen is insufficient for varietal identification.

COVENT GARDEN MARKET.—JAN. 18TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3 6	Lemons, case ...	30	0 to 60 0
Cobs ...	40	0 45 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb. ...	0	10 1 6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0	0 0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1	0 0 0	Parsley, doz. bnchs. ...	2	0 3 0
Carrots, bunch ...	0	3 0 4	Parsnips, doz. ...	1	0 0 0
Cauliflowers, doz. ...	2	0 3 0	Potatoes, cwt. ...	2	0 4 0
Celery, bundle ...	1	0 0 0	Salsafy, bundle ...	1	0 0 0
Coleworts, doz. bnchs. ...	2	0 4 0	Scorzenera, bundle ...	1	6 0 0
Cucumbers ...	0	4 0 8	Seakale, basket ...	1	6 1 0
Endive, doz. ...	1	3 1 6	Shallots, lb. ...	0	3 0 0
Herbs, bunch ...	0	3 0 0	Spinach, pad ...	0	0 0 0
Leeks, bunch ...	0	2 0 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 1 9
Lettuce, doz. ...	1	3 0 0	Tomatoes, lb. ...	0	4 0 9
Mushrooms, lb. ...	0	6 0 8	Turnips, bunch ...	0	3 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36 0	Ficus elastica, each ...	1	0 to 7 0
Aspidistra, doz. ...	18	0 36 0	Foliage plants, var., each	1	0 5 0
Aspidistra, specimen ...	5	0 10 6	Lilium Harrisii, doz. ...	24	0 36 0
Crotons, doz. ...	18	0 24 0	Lycopodiums, doz. ...	3	0 4 0
Dracæna, var., doz. ...	12	0 30 0	Marguerite Daisy, doz. ...	9	0 12 0
Dracæna viridis, doz. ...	9	0 18 0	Myrtles, doz. ...	6	0 9 0
Erica various, doz. ...	9	0 24 0	Palms, in var., each ...	1	0 15 0
Euonymus, var., doz. ...	6	0 18 0	specimens ...	21	0 63 0
Evergreens, var., doz. ...	4	0 18 0	Pelargoniums, scarlet, doz.	8	0 12 0
Ferns, var., doz. ...	4	0 18 0	Solanums, doz. ...	6	0 12 0
„ small, 100 ...	4	0 8 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	6	0 to 8 0	Lilae, bunch ...	5	0 to 6 0
Asparagus, Fern, bunch ...	2	0 2 6	Lily of the Valley, 12 sprays	0	6 1 3
Azalea, white, 12 sprays	0	9 1 0	Marguerites, doz. bnchs.	6	0 8 0
Bouvardias, bunch ...	0	4 0 6	Maidenhair Fern, doz.		
Carnations, 12 blooms ...	1	6 2 0	bnchs. ...	6	0 8 0
Chrysanthemums, per bch.	0	6 2 0	Narcissus, doz. bnchs. ...	5	0 6 0
specimen			Orchids, var., doz. blooms	1	6 9 0
blooms, per doz.	4	0 6 0	Pelargoniums, doz. bnchs.	6	0 10 0
Daffodils, single yellow,			Poinsettias, doz. blooms ...	12	0 15 0
bch. 12 blooms ...	1	6 0 0	Roses (indoor), doz. ...	2	0 4 0
Eucharis, doz. ...	4	0 6 0	Red, doz. ...	6	0 8 0
Gardenias, doz. ...	2	0 3 0	Tea, white, doz. ...	3	0 4 0
Geranium, scarlet, doz.			Yellow, doz. (Perles)	2	0 8 0
bnchs. ...	8	0 12 0	Safrano (English) doz.	2	0 2 6
Hyacinths, Roman, bunch	0	6 0 8	Pink, doz. ...	5	0 6 0
Lilium lancifolium, white	3	0 4 0	Smilax, bunch ...	2	6 3 0
pink	3	0 4 0	Violets ...	1	0 2 6
„ longiflorum, 12 blooms	8	0 10 0	„ Parme, bunch ...	4	0 6 0

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary* Mr. A. E. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.



AN OLD SUBJECT,

BUT ever recurring. This is only natural when the subject matter appears on our tables at least three times a day, and four times if we belong to those folks who indulge in the luxury of "afternoon tea"—and who does not nowadays? Perhaps not every day, but certainly on those days when we welcome guests. The meal, pleasant and cheerful, is quite a modern institution, and, we were going to say, innovation, but we dare not go so far, as we fear the frowns of those daughters of "D., Deal," who may chance to read these dry, dull articles touching on the "Home Farm."

Well, you have all guessed what food or delicacy it is to which we refer. Food indeed, for butter is a form of fat which is most easily taken by women and children, and which is so necessary to their well-being. So much fat must be eaten every day if the balance of Nature is to obtain, and to many people the fat of beef, mutton, or bacon is most repulsive; therefore it is in milk, butter, or cream we must look for some good sound equivalent.

Milk as a rule is not taken in such great quantities that it can be relied upon to furnish all that is necessary. It contains ingredients of the greatest possible value, and we would advocate its larger use; but we would also add a word of caution—boil. We never (the wisest of us) can tell where may lurk the deadly microbe of consumption, but we have been assured by savants that the greatest danger arises from tainted milk. This danger is real, because it is most difficult to be absolutely sure of the healthy state of the cow from which it is drawn without a post-mortem—a difficult and inconvenient process which will not commend itself to many. Boiled milk and open windows, and we may hope to fight and worst the dread foe consumption.

But we are off the subject of fat, that pure, rich golden fat that trebles the value of the bread—that soaks lusciously in the browned toast, that lurks in the soft crumb of the muffin or teacake. To be perfect it should be free from taint or odour, should be so delicate in flavour as to be only suggestive of sources from which it sprang. But alas! can we say honestly this is the case with most of the butter exposed for sale, say in any market town in the United Kingdom? Sample it for yourself, and you will agree that most of it has a strong personality of its own, which in a few days develops into a distinct and not agreeable aroma.

There are of course many noble exceptions, and these not to be found entirely in cases where everything as regards the dairy is perfect. It is not the appliances any more than it is the pen that makes the poem. It is the moving spirit behind the appliances. We have seen the best of butter from dairies where the accommodation was limited in the extreme, and the dairymaid the busy head of a large family, and we have tasted butter from the dairies of great and noble that we could not quite class as anything but nasty. The country at large demands a regular supply of good butter of uniform quality—how is this to be obtained?

Not from the 1001 little dairies scattered over the length and breadth of the country do they turn out a uniform article either as

regards quality or colour. It is only by getting hold of the cream, or rather of the milk in the raw state, and treating it in factories or rather creameries that this desideratum is arrived at. In fact it might be classed as machine made butter; the milk is all mixed, the cream separated, and each pound and pat as like its brother as peas out of one pod.

Several questions suggest themselves to the thoughtful mind. The first is naturally the commercial one. Given the butter, what about the market? We answer with confidence, If Danish butter be so in demand, solely and wholly on account of its uniform character, why should not English-made butter meet the same demand? Mind, we must lay ourselves out to in the first place tempt our customers, and by fair charges and a good article insure their adherence. The public like straightforward dealing, and the public once caught must be kept.

Of course, there is the question of the necessary funds for establishing the creameries, but poor as Ireland is she has solved that riddle—co-operation does it. Lord Zetland, speaking the other day, thus touches on the subject. Previous to and in 1839 there was but one creamery in Ireland, with thirty members. In 1891 another was opened, and in 1898 there were no less than seventy-two co-operative working creameries, and fifty-one more in course of building. Of the number of members we can gain no exact report, but these figures speak for themselves; and these creameries exist in poor, down-trodden Ireland—Ireland which is said to be always a day behind the fair. Surely in rich, progressive England the thing might be worked. A Colonel Godson established one in the Ripon neighbourhood, which has been most successful, and two more have since been started quite near.

There has always been the question of the price to be paid for the farmer's milk, and the difficulty of transport from the farm to the creamery. Of course, if the concern were taken up by the farmers themselves, they being the chief shareholders, the difficulty of milk price would vanish into thin air; and we do not at all see why, if farmers can "run" seed-crushing and manure manufactories for the benefit of themselves, why they should fail to make a creamery go. As to the milk carriage, we should suppose the factory placed in a populous cow district, and could not some system of collection be worked? We fail to see why each individual farmer should cart his own few gallons when a general carrier might meet the wants of the case. This is only a crude suggestion, but one we think quite practicable.

There is another point to notice in connection with the price paid per gallon for milk. As milk varies so greatly, and the causes are difficult of control, should not the per-centage of butter fat form the basis of equitable payment? We think it would only be fair and reasonable.

Then, again, we suppose those dairies which supply the milk would come under notice of the sanitary inspector. He is a most necessary official; and might we suggest that a few "surprise" visits paid, say at morning milking time, might result in sundry divers reforms? We have heard of dirty milkers and dirtier surroundings; things are put into ship-shape by noon, and a casual visitor may never guess at half the abuses that exist.

WORK ON THE HOME FARM.

Mild and unnatural is the weather at the present time. Much as rain is wanted for the water supply, frost is absolutely essential if this year's Barley is to have a fair chance. We have been ploughing with a wet surface for want of something better to do, and without frost to make the land friable spring will find us with a poor seed bed.

A field of seeds is now being ploughed for Oats. The best use has been made of the old pasture for the sheep, and now we are turning down the sod 6 inches. This is deeper than we plough for Wheat; but on fairly dry soil we find that Oats do better on deepish ploughing, perhaps owing to the fact that they get a deeper root-hold and stand dry weather better.

The next work will be crossing fallows, and although it may seem rather early to begin we must take seasons as they come, and do the work

when it is ready and ignore the calendar. At any rate little mistake can be made, for should the hoped-for frost make its appearance the land will be laid more open to its influence, and should the weather keep open and dry the drag and harrow may soon be at work.

Wheat as a rule looks well, but some pieces are giving signs of grub by turning slightly yellow, and we find a patchy appearance of thinness; on walking over these patches we notice a hollowness, and the feet sink in at every other step. The chief remedy is rolling, and the rolling must be done as soon as possible. It is seldom possible to roll so early in the season, but if the roller be kept ready in the field, and horses are working at ploughing or other work over the fence, many opportunities may be found for rolling for part of a day, if not for the whole of it. We have often remarked to ourselves, when crossing Wheat in early February about eleven or twelve o'clock, "Dear me! why, we might have rolled to-day." The prompt use of the roller is a very important factor in the successful growth of Wheat on light land.

We are interested in the duel in a contemporary between two well-known authorities as to the value and capabilities of poor land. We agree with the ex-M.P. of long experience that there is land not worth cultivating, and we believe that the learned professor has yet to learn what poor land really is.

VINTON'S AGRICULTURAL ALMANAC, 1899.*

A CAPITAL sixpennyworth, worth the money for the sake of the portrait of that good old English gentleman, Lord Coventry, President of Royal Agricultural Society for this year. There is also a good likeness of Lord Londonderry, Chairman of Central Chamber of Agriculture. The two papers that strike us most are contributed by Sir W. Gilbey ("Table Poultry"), and one by Primrose Macconnell on "Feeding and Watering Cows;" but it is almost invidious to single out any special writer when all are so good. When the reader sees the names of such men as Prof. Wrightson, Mr. W. E. Bear, Mr. Soulby, Mr. T. Hill, Dr. Bowman, and others, he may be sure he will meet with subjects of great interest to him as a farmer, carefully treated and put in an interesting form.

OUR LETTER BOX.

Feeding Cows (Cowman).—For bran, substitute beanmeal; use Mangold now you are allowed to do so, but add a little Carrot if you can procure it. As hay forms a large portion of the food, see that the cows have plenty of chilled water, or at any rate the chance of it, four times a day. Do not turn the cows out.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

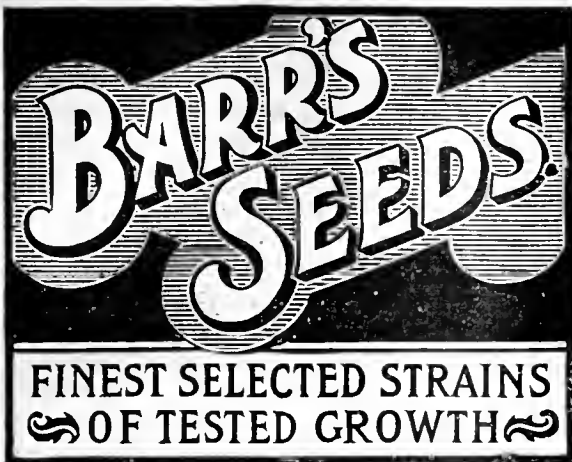
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899. January.		Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs.	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	8	29.782	49.6	47.7	S.	43.0	52.9	44.8	59.3	40.0	—
Monday	9	29.612	46.9	45.3	S.	43.1	51.9	44.9	66.2	39.1	0.010
Tuesday	10	29.312	49.3	46.7	S.	43.3	51.0	46.6	55.2	41.1	0.107
Wednesday	11	29.565	36.9	36.1	S. W.	43.0	49.1	36.6	49.6	31.1	0.232
Thursday	12	29.336	49.1	48.5	S. W.	41.9	54.3	36.9	68.9	30.9	0.408
Friday	13	29.821	43.1	40.3	S. W.	42.1	52.2	40.3	52.8	34.1	0.417
Saturday	14	29.934	37.9	37.3	S. W.	42.1	45.9	36.6	68.0	29.2	—
		29.623	44.7	43.1		42.6	51.0	41.0	60.0	35.1	1.174

REMARKS.

- 8th.—Fair day, with sun at times.
 9th.—Mild, sunny, and springlike.
 10th.—High wind and slight rain in small hours; a little sun between 8 and 11 A.M.; heavy showers with hail at 11, noon, and 10.30 P.M.; bright sun from 1.30 P.M. to sunset.
 11th.—Fine and generally sunny in morning, then overcast; slight rain at 0.55 P.M., and heavy rain from 3.45 to 4.15 P.M.
 12th.—Rainy early; dull and damp generally, but gleams of sun about 11 A.M.; heavy rain from 1.30 to 4 P.M.; clear night.
 13th.—Clear early, cloudy by 9 A.M.; incessant rain from 10.45 A.M. to 6 P.M., clear night.
 14th.—Fine and sunny all day; clear night.
 A very warm week for its date, no frost in the air, and much rain and wind.
 —G. J. SYMONS.

* 9, New Bridge Street, Ludgate Circus.



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- | | |
|---|---------------------------|
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| 6 Pints Broad Beans | 1 " Gourds |
| 2 Pints Dwarf French Beans | 1 " Kohl Rabi |
| 1 Pint Scarlet Runner | 2 " Leek |
| 1 Packet Asparagus | 3 " Cabbage Lettuce |
| 2 Pkts. Beet | 2 " Cos Lettuce |
| 2 " Borecole | 2 " Melon |
| 3 " Broccoli | 6 ozs. Mustard |
| 2 " Brussels Sprouts | 4 " Onion |
| 3 " Cabbage | 2 Pkts. Parsley |
| 1 " Capsicum | 2 ozs. Parsnip |
| 4 ozs. Carrot | 4 " Radish |
| 2 Pkts. Cauliflower | 1 Packet Salsify |
| 2 " Celery | 2 Pkts. Savoy Cabbage |
| 1 " Couve Tronchuda | 2 " Scorzouera |
| 4 ozs. Cress | 6 ozs. Spinach |
| 3 Pkts. Cucumber | 6 Pkts. Herbs |
| 2 " Egg Plant | 2 " Tomato |
| | 4 ozs. Turnip |
| | 1 Packet Vegetable Marrow |

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No. 970.—VOL. XXXVIII., THIRD SERIES.



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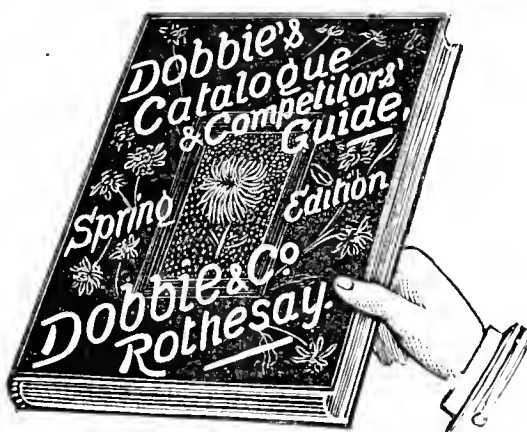
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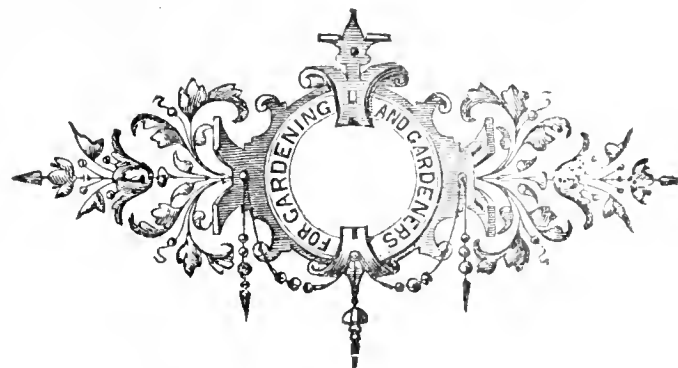
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Journal of Horticulture.

THURSDAY, JANUARY 26, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

LIFE AND FOOD.

THE use of the terms Life and Food, when applied to plants, implies the fact that vegetation not only lives, but requires food for its sustenance. The life and appetite of a plant are simpler, but not less peculiar, than those of an animal. The microscope and chemical analyses unfold to a certain extent cell formation and development in the character of the substances employed in building up plant structures, the form of mechanism adopted in the first stages of growth, and most of the chemical changes and transformations which occur in subsequent development.

The vital force of the plant controls and guides its activities so as to make them effectual. By this vital force, and through the medium of active microscopic cells, all the changes that occur in building up plant structures and products take place. Some plants among the lower orders of the vegetable kingdom are so simple in structure that their whole organism consists only of a single cell. All plants belonging to the higher orders consist chiefly of globular or angular cells, and all growing parts of a plant, without exception, are aggregations of minute living cells.

Upon closer observation we find that the plants of a single cell consist simply of a cell wall, which is lined with a smooth homogeneous mass, called protoplasm, and is filled with fluid. This simple cell, thus constituted, has been termed the "workshop" in which the processes of growth and development are carried on; and during the seasons of growth it is the scene of intense activity. Simple and insignificant in size and structure, this tiny one-cell plant is the miniature of the massive tree or shrub that overshadows it. The larger plant is only an aggregation of cells piled on cells, each one of which carries on the same kind of work that is performed by its tiny prototype.

Cell structure and development, thus briefly described, is found to be very much the same in all plants, provided the cells are young and belong to the growing parts. Plant cells show no apertures under the microscope, and yet they are readily permeable to liquids.

No. 2626.—VOL. C.—OLD SERIES.

In examining the structural parts of plants, such as have ceased to grow, as in the full-sized leaf, the perfectly formed wood, we find that the cells do not correspond to the description just given. In the external form, thickness and appearance of the cell wall, and especially in the character of the contents, there is infinite variety. But this difference is simply the result of changes in the original cells during the processes of growth and maturity.

Thus, many of the lower orders of plants are constituted entirely of cells, but in higher orders, as in flowering plants, these simple cells are developed into cellular tissue, wood tissue, and vascular tissue. The plant, then, when fixed in the earth, consists of the root, stem, and leaf, all of which are developed by the proliferation or generation of cells from the parent cell or cells in the germ vesicle cells of the seed.

We have now to consider the nature of the food used by the plant cell. This food consists of the elements of the atmosphere, and of the mineral or inorganic substances of the earth. Wonderful and mysterious, indeed, is the power of the plant cells; under the influence of the sun's rays to separate from atmospheric air the compound known as carbonic acid gas, and to disintegrate and to appropriate to its use the elements contained in the hardest rocks.

While we know the elements essential to plants as food, and the forms of combination of the elements best adapted to the growth of plants, we are almost entirely ignorant of the methods by which they acquire their food, and build up such tissues as cellulose, starch, albumen, oil, fat, resin, and other matter which constitute their structure and products. This power of appropriating and assimilating elements must be largely referred to the vital chemistry of the plant.

It was thought at one time that plants lived on humus or vegetable mould, and that the mineral substances found in their ashes were accidental or extraneous; but we now know from actual research that mineral substances enter into the vegetable structure in solution as food, and that plants cannot exist without them. Yet it is true that they are required in very minute proportions in comparison with the carbonaceous and nitrogenous food of the plant.

In reality by far the largest portion of the bulk of plants is made up of a combination of organic substances; about 95 per cent. of so-called atmospheric food, such as carbon, hydrogen, oxygen, and nitrogen; the remaining 5 per cent. is obtained from the soil, and is called mineral food, consisting of potash, soda, magnesia, lime, phosphoric acid, sulphuric acid, and iron. These are the elements considered to be the most essential as plant food. It is, however, only nitrogen, potash, and phosphoric acid, which have aptly been called the golden tripod of plant life, that the gardener need, as a rule, trouble himself about, except in certain cases, when the element lime becomes absolutely necessary. These are the substances that should rule the selection and purchase of artificial manures.—J. J. WILLIS, *Harpenden*.

BARK PRUNING AND LIFTING OLD PEAR TREES.

BARK pruning, or the ringing of fruit trees with a view to bringing them into early bearing, is a method by which temporary returns may be obtained, but the practice has not, I think, much to recommend it in a general sense. Trees prone to extreme vigour produce roots few in number and of a size proportionate to that of the branches, and vigorous growth often indicates deep root burrowing in the subsoil.

So long as this thong-like root growth is allowed to go unchecked, there is not the remotest chance of getting those of a fibrous nature in quantity, or near the surface, and I cannot see what beneficial influence can be brought to bear on the production of root fibres by ringing of the main stem or branches. It is easy to understand that in a young vigorous tree ringing of the bark would so check the flow of sap and the excessive growth as to promote that of a more fruit-bearing character for a time. Except in such cases where access to the roots is rendered impossible from local circumstances, I should not consider it advisable to adopt ringing as a substitute for root-pruning, and I think it will be found that the course taken by Mr. Picker (page 49) in dealing with his old deep-rooted trees is the better one.

By severing tap roots of large size a great check is given the tree, and by enriching the surrounding soil, mulching and watering in dry weather, roots of a fruit-producing character are sure to follow in due course. A stone slab of 18 inches square could not serve any useful purpose, and would prove a hindrance rather than otherwise in root-

pruning even a much younger tree. A layer of dry lime rubble 9 inches thick at a suitable depth has been found a good provision against deep root burrowing in Pear trees. The course advised by the Editor of reducing the branches and laterals would much assist the trees after the severe operation to which they have been subjected.—W. S.

ASPARAGUS.

It is difficult to write anything new in respect of the culture of this vegetable, but considering the high estimation in which it is held both in large and small establishments, no apology should be necessary for a few remarks on a well-worn subject. Except on very strong land Asparagus is not difficult to grow. In light sandy soils, given generous treatment, it will thrive like a weed, reproducing itself in all sorts of odd corners, and with such ground expensive methods of preparation are not needful; in fact, simple practice leads to profitable results. With clay the case is totally different, special beds must be formed. The winter is the best time to commence this operation. If the soil is very strong it may be found advisable to remove some of the original, refilling with old refuse from the potting sheds, road scrapings, leaf soil if procurable, ashes from rubbish fires—anything, in fact, having an opening tendency. If the land is not well drained, this must be provided by some means if good crops are to result.

There is still to my mind no better method of arranging Asparagus beds than the old one of having three rows of plants in a bed 5 feet across, one row through the centre and the others 18 inches from it on each side, and having alleys between about 15 inches wide. The materials I have mentioned above should be trenched into the soil, and as far as possible be dug over two or three times during the winter, to thoroughly mix the whole. I am aware that some very good gardeners grow their Asparagus on a different system—viz., in rows from 6 to 8 feet apart, with other crops between. This is, I think, more suitable for large places; in a small garden the old-fashioned beds count very much for tidiness, and are preferable.

On light, well-manured land seeds of Asparagus may be sown in April, in drills 3 or 4 inches in depth and 18 inches apart. If this is done, every fourth row may be taken up at the end of a year, and the spaces thus formed will constitute the paths. The young plants will eventually require thinning to about 15 inches asunder in the rows. If the seeds were sown thinly in the first instance, they may all grow together the first year, but if at all crowded they should be thinned when 2 or 3 inches in height. As is generally recognised now, planting is best done in spring, when the crowns are beginning to move. Open sufficient ground to allow the roots to be spread out fully and evenly, and, when finished, the crowns may be about 3 inches below the surface.

On more than one occasion I have been asked when to cut down Asparagus, almost as if there were some mystery about this process. The old growths, as a rule, may be cut the first or second week in November, but except on the score of neatness (of course that is important) there is no need for extreme haste. It must be remembered the sooner the ground is cleared so much the earlier may a good mulching of manure be applied if thought necessary. Is it, however, really essential that Asparagus should have as much manure as it often gets? True, it is a gross feeder, still there is usually the salt in spring as well as the autumn dressing. A friend of mine having read in the *Journal* of a gardener who was in the habit of using the ashes from the refuse fires was led to try these each alternate year with most excellent results.

Scarcely enough importance is, I think, attached to watering in dry seasons. I took charge of some twenty year-old beds in the cutting season, and there seemed to be the greatest difficulty in maintaining a supply for the house. We gave a light dressing of nitrate of soda, and a thorough watering, repeating the latter as needed. In a fortnight there was ample produce, while in three weeks Asparagus was being given away. The nitrate was repeated once or twice afterwards, and a good supply was easily maintained.

Forcing Asparagus is not a hard matter if proper convenience is at hand for heating. I have seen blanched stems cut from a Mushroom house which were much appreciated, but as a rule it is best grown in a frame, so that the light may have the necessary effect, and good green heads be produced. However showy the great white bundles of French produce one sees in shop windows may be, I should certainly prefer good green tops cut just below the surface of the soil, about 6 or 7 inches in length, with enough white left on to serve as a "handle."

In my opinion salt is sometimes given too freely to Asparagus. A light dressing is better than a very heavy one so long as enough is applied to kill weeds. The tendency of salt is to lower the temperature of the soil, and this is not desirable. To sum up, Asparagus should have the best of culture, be kept clear of weeds, and then the grower will be justified in expecting good succulent heads; whether his object is the market or an employer's table.—J. SHALFORD.



CYPRIPEDIUM WOTTONI.

THE collection of Orchids so excellently tended by Mr. H. J. Chapman at Cambridge Lodge, Camberwell, for R. I. Measures, Esq., is peculiarly rich in *Cypripediums*, many of which are hybrids that have been raised there. Naturally the older species and varieties are splendidly represented, and we have on more than one occasion had the pleasure of examining the plants, and reproducing some of the choicest of the flowers. It must not be thought that *Cypripediums* are the only Orchids grown, for such is by no means the case, as *Masdevallias* are superb, while *Cattleyas*, *Laelias*, *Odontoglossums*, *Dendrobiums*, and others are little if any inferior. At the present moment, however, we would place before our readers a representation of *Cypripedium Wottoni* (fig. 12), to which the Orchid Committee of the Royal Horticultural Society recommended an award of merit on November 8th last. As a glance at the woodcut will suffice to prove, the flower is singularly massive. It resulted from a cross between *C. bellatulum* and *C. callosum*. The dorsal sepal is very broad and substantial, the colour being pale claret with darker veins, paling gradually towards the white margin. The fine pouch is deep claret, while the petals are a lighter shade of this colour, with darker suffusions and heavy spots extending from the base to the centre.

A FLORIFEROUS CYPRIPEDIUM.

There is at the present time in one of the Orchid houses at Rangemore a *Cypripedium* (named provisionally *Venubel*) bearing six flowers on one spike, five fully open and one developing. Can any of your readers tell me if such an event has occurred before to their knowledge? I know it is nothing unusual for a plant to have many flowers develop one at a time, such as on *C. Sedeni*, but I think this one having five flowers open simultaneously must be something unusual.—J. DAWSON.

SACCOLABIUM GIGANTEUM.

This pretty and interesting plant has again flowered well this season, and the dense racemes of small blooms have a bright appearance and scent the house wherein they are grown. *S. giganteum* thrives best in a high temperature, and owing to the large size of the roots, fairly roomy pots or baskets should be allowed, these being suspended as near as possible to the roof. Nothing but sphagnum and charcoal need be used as compost, and the plants must be kept in a medium state as to moisture while the flowers are open. When these are past and the plants have taken a slight rest they commence to grow, and increased heat and moisture are required.—H. R. R.

DESSERT APPLES.

I HARDLY think Mr. Pieker is as fortunate in his selection (on page 4, January 5th) of varieties for dessert as in the kitchen section. He rightly places Cox's Orange Pippin at the head of the list. No Apple equals it for flavour; in my opinion it is much superior to Ribston Pippin, which is in many instances decidedly dry. Cox's is, as a rule, a constant bearer, except perhaps when an exceptionally heavy crop is borne on the trees one year, it is much lighter the next. Where the trees are large it is not always possible to thin the fruit, hence some weakening must take place, especially if stimulative food is not freely supplied. In no form does this Apple succeed better than as a half-standard. In this form a handsome tree is made; the long flowing branches sweep the ground and give an extremely wide area of fruit-bearing parts, much more so than can any bush-grown tree. Where space is available plant half-standards and allow the trees to develop freely without much shortening of their branches after the foundation is laid.

Every word of what Mr. Picker says of Worcester Pearmain is correct in my ear also. The quality is quite third-rate, but people will have it on account of its colour. If I were compelled to grow one dessert Apple only for sale I should select this, treat it freely, and expect satisfactory results.

Kerry Pippin is much too small in my opinion for either home use or market; certainly I should replace this with Benoni, which is not

nearly enough known as its merits deserve. The fruit much resembles King of Pippins in shape, but is perhaps brighter in colour, while the flavour is superior, and, what is more important than all, it comes in at a time when dessert Apples are scarce—just before King of Pippins is ready and after Worcester Pearmain is finished. The tree is an upright grower, a point in its favour for market work, as it can be planted closer together than many sorts.

Irish Peach I do not think is worthy of its place in Mr. Picker's list; certainly for market I have found it quite useless, its dull appearance and soft flesh entirely putting it out of the question. I should replace this with Devonshire Quarrenden, which always finds a ready sale and quick consumption at the home table.

King of Tompkins' County growing in the open has not been a success with me, as it repeatedly fails to give anything like a reasonable return. I hardly think Dutch Mignonne is good enough in quality as a dessert Apple. I should replace these two with Lady Henniker and Claygate Pearmain, both for home use. Allington Pippin, Gravenstein, and Trumpington I do not know enough of to express an opinion.

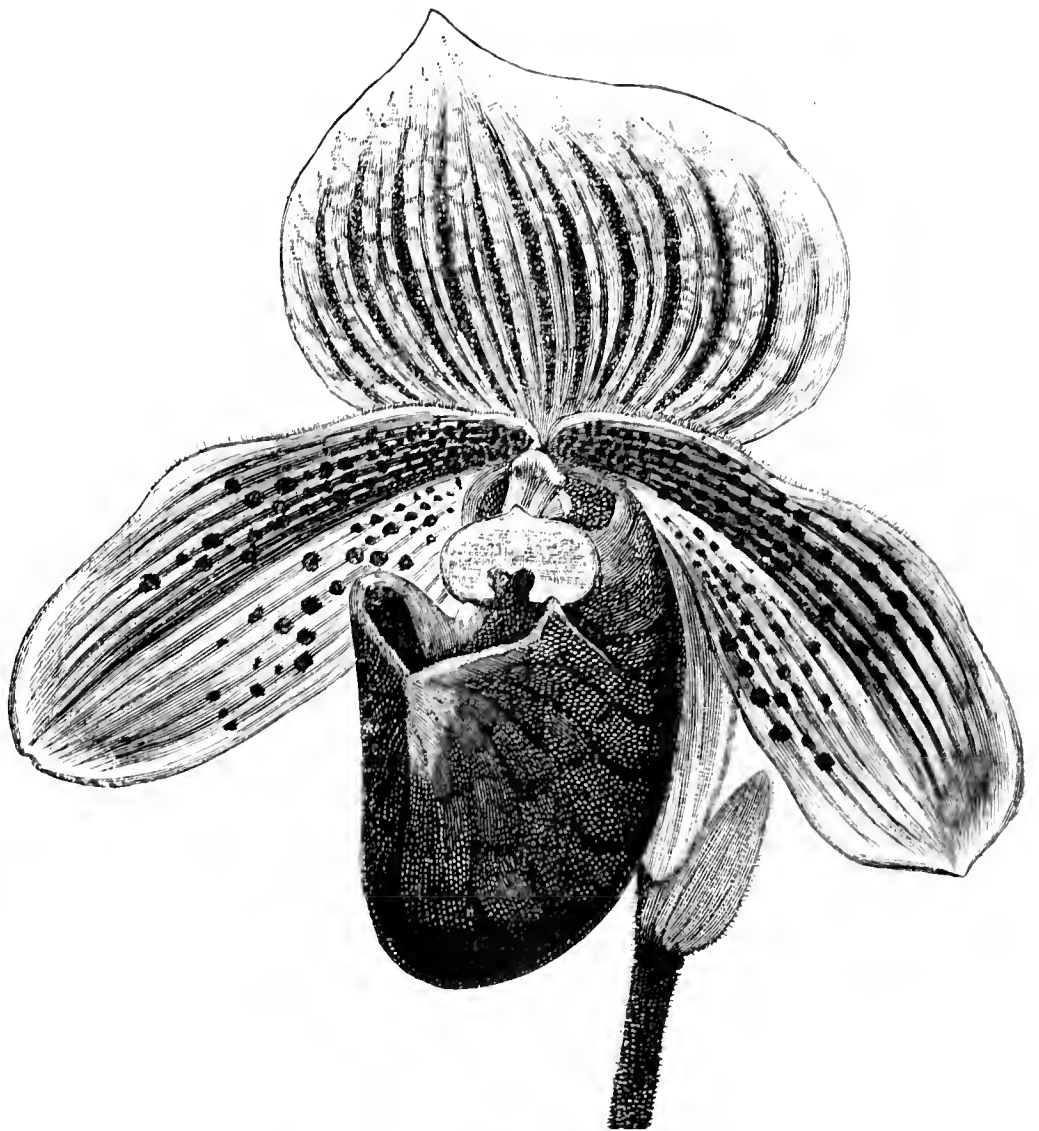


FIG. 12.—CYPRIPEDIUM WOTTONI.

Blenheim Pippin I consider one of the best Apples in cultivation. When established as a standard it produces a crop more certainly perhaps than any other variety grown. I used not to recommend it on account of its slow growth and similar fruit-producing quality, but having had twenty years' experience with trees I have altered my opinion, and now recommend it always. Deep planting in strong soil is certain to result in failure, as the branches become affected with canker. Plant on the surface and mound around it, treat liberally at the roots, allow the growth to extend freely, but thinly, and success with this Apple is certain to follow.—E. MOLYNEUX.

MR. PICKER certainly distinguishes between Apples for home use and for market, otherwise some varieties which he mentions on page 4 would scarcely have found a place in his selection. But apart from those included, why is one of the best market Apples for eating uncooked omitted? In a strong tenacious loan in which Cox's Orange Pippin is not happy, the crimson-cheeked Quarrenden grows and bears as well as Worcester Pearmain, and the fruits find acceptance with general consumers.

Baumann's Winter Reinette is approved for market, no doubt because of its colour and easy growth, but denounced for home use

because of its inferior quality. It is in my experience the most disappointing Apple of modern times for eating in either a cooked or uncooked state. It is as judged for quality absolutely bad—nasty; and yet the Royal Horticultural Society place it in their list of dessert Apples in their "Rules for Judging." It is unworthy of its position there, and ought to be expunged.

Mr. Picker describes Dutch Mignonne as "an excellent Apple for private use." I have grown it for years, but have never found it to find favour at the dessert table. The tree bears abundantly, and is handy for affording a basketful of fruit now and then for the servants' hall, or it would have been cut down and grafted long ago.

Gravenstein is an ideal Apple for persons with bad teeth, as the flesh is so tender and melting, also pleasantly flavoured. Mr. Picker correctly describes the true Gravenstein. I have seen trees and fruit under this name which are not true, and the genuine variety does not seem to be grown in many gardens.

Margil Mr. Picker correctly describes as a first-class dessert Apple, and such it undoubtedly is. It requires free generous soil and a sheltered position. In appearance it suggests a combination of American Mother and Ribston Pippin. In quality it is as good as either, but differs somewhat from both. It is not a market Apple, but a choice dessert fruit.—A LINCOLNSHIRE GROWER.

TOMATO CULTURE.

(Continued from page 44.)

In the nursery catalogue of Messrs. Thomas and James Backhouse, York, 1827, Tomato is not mentioned, but is referred to as a "culinary" under the name of Love Apple, *Solanum Lycopersicum*. Mr. W. Masters, in "Hortus Duroverni," a catalogue of plants and seeds, 1831, includes it among "flower seeds" under the specific name of *Lycopersicum esculentum*, Red Love Apple, and enumerates a variety, *L. c. chrysocarpum*, yellow-fruited, both tender annuals, growing 3 feet in height, flowering or fruiting from July to September, and natives of South America. Loudon's "Encyclopædia of Plants," new edition, edited by George Don, F.L.S., 1858, still has *Solanum Lycopersicum*, Love Apple, and in the footnote gives the name in French—viz., Tomato, which accounts for the name Tomato, and the market growers "Toms." Loudon says:—"Its use for sauce in this country is greatly on the increase, and it is cultivated to a considerable extent near London, against walls and artificial banks, being raised on a hotbed and transplanted like other tender annuals." This, as the editors and revisers were only responsible for the supplements of the Encyclopædia, would be written by Loudon in 1829. Then, according to MacIntosh's "Practical Gardener," Love Apples were as well grown outdoors, if not better than now, especially near London, to which the culture appears to have been for a considerable time mainly centred. Thompson's "Gardener's Assistant," 1859, supersedes Love Apple by Tomato, and says a wall with a south aspect "is indispensable in cold localities, both in England and Scotland" for it outdoors. In the same excellent work the author says, "The Tomato is very rarely forced in this country. Fruit may, however, be produced as early as April or May by sowing in October in pots of light rich soil placed in a Pine stove." The first separate work on "The Tomato, with Cultural Directions for Maintaining a Continuous Supply of Fruit," was published at the *Journal of Horticulture* office in 1881, the author being Mr. W. Iggulden.

Tomatoes can be easily grown, either indoors or outdoors. It is no use making excuses about means, for as the author of "The Tomato" observes, "Those who expect to have everything 'cut and dried' for them, or, in other words, expect facilities of the best description for every undertaking, are very liable to be out-distanced in the 'long-run' by those of a more inventive and persevering turn of mind."

The culture of the Tomato may be divided into indoor and outdoor, and these again be subdivided into several sections, which will be best referred to in successional order of crop production.

INDOOR CULTURE.

The Tomato requires a light, airy, well heated structure, and so placed as to receive all the sun possible from its rising to setting at all times of the year. A lean-to, or, better, a three-quarters span-roof small house or pit facing due south, answers for early crops. Span-roofed houses, however, are most in vogue, their low sides, whether of masonry or wood, being a consideration, while they expose a large surface of glass to the light. They range in width from about 10 feet to 30 feet, and in length from 20 feet to 100, or even 300 feet respectively. The small houses are usually found in private establishments, a house 10 feet wide and 20 feet long affording a supply of Tomatoes equal to the requirements of a fair-sized family for two or three months. Such houses or pits are of the ordinary type used for growing Cucumbers, Melons, forcing Strawberries, French Beans, or growing small plants for decorative purposes, and the most useful a gardener can command apart from the Peach houses and vineries. They are

sometimes placed with the ends east and west, when the southern side of the roof proves much the best for early Tomatoes. In other cases the houses have the ends north and south, when there is not much to choose between the east or west side of the roof; but I think the east has the advantage if anything in earliness.

Large structures have considerable advantages over small houses. 1, They cost less relatively to construct, there being a much smaller extent of sides and ends. 2, They entail less expense in heating appliances, narrow houses requiring more piping than wide ones. 3, Enclosing a larger body of air they are less affected by climatic vicissitudes, neither heating so quickly by the sun, nor losing heat so rapidly when it is obscured. 4, The temperature is more evenly and economically maintained under any and all circumstances, so that the market grower, with his acres of large Tomato houses, has an immense advantage over the private grower with his small houses. For this reason, and often no other, Tomatoes can be more cheaply bought than grown in the heyday of the Tomato season; but where there are a number of houses, plant and fruit, the heating of a small house makes little difference, and the fruit comes in so much earlier when given the best advantage of aspect that the big house is easily superseded.

Besides, the large growers—that is, the most "cute" of them—have small houses, extra well heated, as well as monster structures, that may well be called "fields" in comparison with the "gardens" of the small growers, and they utilise these pits or small houses for raising the plants. The market grower has still the further advantage of drafting his plants as they grow into the all-light structures, where they cannot do anything but grow into sturdy, short-jointed, early fruit-showing specimens, whereas the private grower has to make shift with any positions that are vacant, and as near suitable as circumstances permit. Still difficulties only exist to be surmounted, and by hook or crook the patient plodder overcomes disadvantages by considerable scheming, of which the large grower has not the least inkling, and after all secures a good result with mostly far less trouble from diseases. I think it desirable to make these distinctions between the market grower and the private gardener, in order to prevent confusion, and place both on an equal footing as to expectations and results from commanded means.

Early Crops.—The fruit is most valued during the winter and early in spring, but it, like winter Cucumbers, is far easier to write about than to secure. To try, cuttings rooted in August in small single pots should be grown in the full light and repotted as necessary until a 10 or 12-inch size is reached, which will be sufficiently large for fruiting them in. If it is intended to plant in narrow borders or boxes the plants should first be grown in pots, and not be transferred to the final quarters until some of the earliest fruits are set, then there is a chance of some winter fruit, not otherwise, for the plants are so liable to grow to leaves and cease to set and swell fruit in November and December and January.

Those who have such plants, often healthy enough, may, if in pots and tall, root the promising shoots in gentle heat and grow them, or if the stock is planted out and the growths trained not far from the glass, the leaders may be allowed to extend where there is room. When strong bunches of well formed flowers open on these particular care must be taken in fertilising them, transferring the pollen from the stamens to the stigmas about midday. A few side shoots being also laid in, these commence flowering in due course, and give a succession of fruit. A dry atmosphere is important, the temperature not falling below 55° at night unless very cold, and keeping 60° to 65° by day in dull weather, and 70° to 75° with gleams of sun. Give a little air during mild days, and do not pinch the plants for fresh air when the sun admits of free but judicious ventilation, and water very sparingly.—G. ABBEY.

(To be continued.)

EARLY PEAS.

THE extremely heavy rainfall of the present month will retard the usual early sowing of outdoor Peas. The spring prospects, too, of other vegetables are not of an assuring character in point of variety or quantity, and there will be need for prompt action in preparing for a crop at the earliest date.

Various means are adopted in forwarding Peas under glass for outdoor planting, some being very careful that none, or but the slightest disturbance of the roots happens. It is surprising how quickly Peas resume active growth when planted out of shallow boxes during genial weather in spring, and a slight check thus brought about is soon overtaken.

It is a mistake to hurry the growth of Peas in forcing houses; time is gained by placing them in cold pits or cool houses, where their advancement is more natural. Grown under these conditions there is little trouble in the final planting, because the course of hardening is so simple, and between now and the middle of March there is ample time to get a sufficiency of top growth, while the roots will not be so closely matted as to render planting difficult. The early and hardy Marrow varieties are best for this sowing.—W. S.

DEATH OF MR. JOHN LEE.

At last, after an unusually long and, in the fullest sense of the term, honourable career, one of the most respected and trusted of horticulturists of the century has passed away. "John Lee, of Hammersmith," as he was familiarly called by his many friends, over at least two generations, during which he was a leading personality in the nursery trade, died at the residence of his son, Warwick Gardens, Kensington, on Friday, the 20th inst., in the ninety-fourth year of his age.

The deceased gentleman retired from active business in 1877 after fifty-four years of uninterrupted work, and several of our readers will remember the complimentary dinner given to Mr. Lee at the Horticultural Club on February 15th of that year, though some of them, alas! predeceased the then guest of the evening. Among these may be mentioned the names of the Chairman and Vice-Chairman, Dr. Hogg and the Hon. and Rev. J. T. Boscawen, also Mr. John Wills, who decorated the tables so superbly, Mr. B. S. Williams, Mr. G. Deal, and Mr. Charles Lee. The survivors will remember the feeling and appropriate terms in which the Chairman spoke of his long friendship with Mr. Lee, and wished him on the part of himself and those assembled long life and happiness to enjoy his well earned rest; nor will they forget the extraordinary ovation which Mr. Lee received when he rose to return thanks for the compliment paid him by his friends.

It is not too much to say that the quiet, unobtrusive manner of Mr. John Lee, his innate gentleness of demeanour, and his uprightness of character, placed him on the highest pedestal of popularity in assemblages of horticulturists. Though never effusive, those friends who had long enjoyed the pleasure of his society knew full well that he possessed a warm and honest heart. In discussions, of which prominent men are often the victims, never a word was heard about John Lee that would not have been said in his hearing; and, correlatively, never was heard from his lips a sentence which could be construed as in the least degree a reflection on any of his contemporaries.

The esteem in which he was held was never more strikingly manifested than on the occasions of the anniversary dinners of the Gardeners' Royal Benevolent Institution. His connection with this important Charity dated from its establishment in 1838, and for years, and until far advanced in the "eighties," there was no happier man at the festive board than he. When the "father" was called up a momentary stillness occurred which seemed to make the tremendous reception accorded him the more crushing. As the tall spare form appeared all eyes were turned towards him, and ears were intent to catch every word that fell from his lips. Not that he was eloquent, but because it was felt he was better than that—sincere. He was one of those men who could say a good deal in few words, and these carried with them the conviction that the Institution had no firmer, truer friend on its roll than the "father—John Lee;" and, as recorded on page 64, he has left the splendid charity £100 free of legacy duty.

Though, as stated, the deceased gentleman retired from active business in 1877, when the firm was, and is, known as Charles Lee & Son, we believe he, on the death of his junior brother Charles in September, 1881, took for a time a share in the management, to lessen the strain suddenly thrown on his nephew and present head of the business, Mr. William Lee. Long after that Mr. John Lee attended the meetings of the Fruit Committee at the Drill Hall, as well as at Chiswick, when his ripe experience was of great value in estimating the merits of the products inspected, and his observations, as they were entitled, always carried weight with his colleagues.

The firm of which the subject of these notes was for a great length of time the head, is of historic character, and has been identified for something like a century and a half with the progress of horticulture in this country. James Lee, a native of Scotland, was one of its founders about 1750. He was for some time with Phillip Miller at the Chelsea Botanic Garden, and afterwards gardener to the Duke of Argyll at Whitton, Middlesex. In conjunction with Kennedy, then gardener to Lord Bolton at Chiswick, he commenced business at The Vineyard, Hammersmith, and which ultimately became one of the largest in the kingdom. James Lee was also a botanist and author, and died in 1797. He is credited with the distribution of the *Fuchsia* in England. This is the story as we find it recorded:—

"The *Fuchsia* was introduced by the casual observation that a strange flower had been seen at Wapping. Mr. Lee, nurseryman, Hammersmith, was told of a flower coloured crimson with a fold like purple



FIG. 13.—MR. JOHN LEE.

ribbon in its centre. He hastened to Wapping, found the plant, and, for 8 guineas, induced the owner to sell it, though she wished to keep it because "brought from the West Indies" by her husband. Mr. Lee propagated it rapidly from cuttings, and in the following year sold 300 plants for as many guineas."

This was long known as *Fuchsia coccinea*, but is said by the Kew authorities to be *F. magellanica*, introduced in 1789, while the true *coccinea* is a modern introduction—1878. James Lee is portrayed with a spray in his hand, the flowers of which he is examining, botanist-like, with a lens for noting the essential characters. It is not a *Fuchsia*, but appears to be an *Oenothera*. He is thus on the track in classifying his then new plant, for both belong to the same natural order—*Onagraceæ*.

The Vineyard Nursery, where the foundations of the firm were laid, has, like many other old metropolitan nurseries, fallen a prey to the builders and is eaten up. The present nurseries are at Isleworth, Feltham, and Ealing, and, as imposing exhibits have shown, are rich in ornamental trees and shrubs. But the building invasion is moving on, and will conquer in time as sure as death has conquered the graud old man whose remains were interred in the Brompton Cemetery on Tuesday last in the presence of sorrowing friends. Besides the members of the family we noticed among those who paid a last mark of respect to the deceased gentleman, Mr. Harry J. Veitch, Dr. Maxwell T. Masters, Mr. R. A. Mulligan Hogg, Mr. N. N. Sherwood, Mr. G. J. Ingram, Mr. G. Monro, and Mr. A. Dawkins.

WINTER IN THE SAHARA.

A CONTRAST indeed to the vagaries of our island home. Though even in this arid and eternally scorching clime, where in most parts rain is an unknown quantity, the nights can be tolerably cold, certainly extremely so if reckoned in contrast to the terrific heat on the daytime. As regards the flora of the Sahara proper, with such an indispensable as above mentioned wanting, it must of necessity be but sparse, and for the most part conspicuous only by its absence; but there are delightful exceptions.

In and around the oases there is variety in abundance, and much that affects readers of "our Journal," if only as regards their appetites. In these beautiful spots, surrounded as they are on all sides by the pitiless desert, Nature seems to endeavour to make amends for the destitution around, and even outdo herself in extravagant vegetation. Carefully irrigated and cultivated to the highest degree, they are interesting to the traveller and student of Nature to no ordinary extent. For my part, during a sojourn at Biskra a few years ago, in the winter, I was enabled to study the products and trade of the oasis, and many features of desert life. At El Kantara, another oasis and gorge of surpassing loveliness, and of romantic surroundings, some 100,000 Date Palms (there are over double this number at Biskra) are grown. Besides rice, millet, and many other grains, numbers of fruit, flowers, and Ferns, some cultivated, some wild, feast the eye in their bountiful profusion. Let it not be supposed, moreover, in such an out of the way place that there are no ulterior attractions.

In addition to the climate, which probably is unrivalled for those inclined to consumption and asthma, Biskra is unusually favoured in having a range of mountains (the Aure's), where the gazelle and other game can be pursued, and from the summit of which a wonderful panorama of the Saharan desert may be viewed. Then there are several other oases within easy reach by camel or on foot in the immediate vicinity. In a narrow lane of one of these the writer was making a lunch of Dates as he walked along (it is astonishing how sustaining they are when on the tramp), when an attractive little Arab boy joined company and carried on a kind of conversation with the aid of the scant smattering of Arabic the writer possessed. On parting a few Dates were offered this scion of the desert, and though looked at with evident desire, were yet firmly refused, owing to its being the Fast of Ramadan, when from sunrise to sunset nothing must be consumed. This is a matter they are extremely strict about.

In one direction, within, I think, a day or so from Biskra, the mirage is accommodately *en evidence*, and a short half day's trudge across the sand brings one to the very celebrated hot sulphur springs of Hammam Salatin. Then there is always the chance of coming across a caravan. The camel was an endless object of mystery to me. It apparently lived on nothing, and as if making belief to execute a good square meal on tiny coarse tufts of Rush struggling among the stones and sand.

I must, in closing, make mention (though not in the Sahara) of the beautiful Maidenhair Fern of enormous size I found in the most prodigal quantities deep down the wild gorge above Blida, a most interesting place in a spur of the Atlas Mountains. Here, too, numbers of monkeys abound. A sight more appealing to an Englishman in this same place is the fine stud of some five hundred Arab, Syrian, and Saharan thoroughbred stallions; while, to the lover of fruit culture, the extensive Orange groves of every known shape, size and flavour are an attractive study.—T. A. CARNEGIE CHEALES.



WEATHER IN LONDON.—Sunshine, rain, and wind have held sway during the past week in the metropolis. On Thursday last some rain fell, as did it heavily on Friday and Saturday. Sunday was very bright and pleasant, and Monday turned colder with a slight night frost. Tuesday was dull, followed by a sharp white frost, while Wednesday opened bright and bracing.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, January 31st, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. This will be the last meeting of the 1898-99 Committee, the new ones coming into office on February 14th. A lecture on "Twelve Months Among the Orchards of Nova Scotia" will be given by Mr. Cecil H. Hooper, F.R.H.S., at three o'clock.

— DWARFISM IN PINES.—A curious instance of dwarfism in Pines is recorded by Mr. C. E. Bessey of the University of Nebraska. On Green Mountain, near Boulder, Col., he found in a crevice of the rock at the summit a Pine tree (*Pinus albicaulis*, Engelm) only 13 centimeters (under 3 inches) high, and 5 millimeters (one-fifth inch) in diameter. It had no branches, and bore a single tuft of needles at the top. Nevertheless, says the "American Cultivator," it showed twenty-five distinct annual rings, and was therefore twenty-five years of age.

— BOURNEMOUTH AND DISTRICT GARDENERS' ASSOCIATION.—At the meeting of the above Society held on Tuesday, January 17th, and presided over by Mr. G. Omer Cooper of Reading and Boscombe, Mr. H. J. Jones of Lewisham gave a "Chat on the Chrysanthemum." This proved most excellent and up to date, and dealt with their culture from the cutting to the exhibition table, and occupied upwards of ninety minutes in delivery. Mr. Jones received a most cordial welcome on his first visit to Bournemouth. After a short discussion he was accorded a hearty vote of thanks. The lecture was repeated before the members of the Parkstone Society on the following evening.

— LIVERPOOL HORTICULTURAL ASSOCIATION.—On Saturday evening the twelfth annual dinner and social evening was held, when some 110 members and friends sat down to an excellent repast. After dinner the chair was occupied by W. Fletcher Rogers, Esq., the esteemed Hon. Treasurer, the following firms being worthily represented and adding much to the enjoyment of all present—viz., Messrs. R. P. Ker and Sons, Aigburth; Messrs. T. Davies & Co., Wavertree; Mr. H. Middlehurst, Manchester Street; and Messrs. W. Rowlands & Sons, West Derby. The usual loyal toasts having been duly honoured a capital musical programme was enjoyed. A vote of thanks to the artistes was suitably proposed by Mr. R. W. Ker, and a similar vote to the Chairman by Mr. A. G. Davies. It was admitted by all present to have been one of the most successful evenings ever held by members of the Association.—R. P. R.

— ROYAL METEOROLOGICAL SOCIETY.—The annual meeting of this Society was held on Wednesday evening, the 18th inst., at the Institute of Civil Engineers, Westminster, Mr. F. C. Bayard, L.L.M., President, in the chair. The Council, in their report, stated that owing to the premises now occupied by the Society at 22, Great George Street being required by the Government, they had been obliged to seek accommodation elsewhere, but not being able to secure offices in the immediate neighbourhood they had taken a suite of rooms at 70, Victoria Street. Mr. Bayard, in his presidential address, gave an account of the Government meteorological organisations in various parts of the world. He first briefly described the founding of each system, and mentioned the names of the various directors, and then enumerated the number of observing stations associated with each organisation. In most countries forecasts of the weather are issued, and Mr. Bayard gave some interesting particulars as to the success attained by each office. The amount of money voted by the various governments for the support of meteorology showed what a very small portion of the revenue of the different countries goes towards the promotion of this science. In the British Isles it is 2s. 6d. per square mile, but only about one-third of a farthing per head. The address was illustrated by a large number of lantern slides, showing views of the various observatories and portraits of the directors. Mr. Bayard was re-elected President for the ensuing year.

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—I have pleasure in announcing that the late Mr. John Lee has left the Institution a legacy of £100, free of legacy duty.—GEORGE J. INGRAM, Secretary.

— GARDENING APPOINTMENTS.—Mr. A. Young, who for nearly five years has been head gardener to the Earl of Cork, Marston, Frome, has been engaged by Sir J. Heathcote Amory, Bart., Knightshayes Court, Tiverton, Devon, in a similar capacity, and enters his duties there on February 9th next. Mr. G. D. Chisholm, for the last six years gardener to Major Middleton, Acacia, Roundhay, Leeds, has been appointed gardener to Mrs. Illingworth, Thornton-le-Street, Thirsk, Yorkshire.

— ARSENIC AND VEGETATION.—In connection with the modern use of arsenical insecticides it is important to take note of such researches as have been made by Herr J. Stokless. He has ascertained that both arsenious and arsenic acids are highly poisonous to the bulk of plants. He finds no truth in the assertion that arsenic may be drawn into vegetable tissues with advantage and serve the purpose of phosphorus. On the other hand, compounds containing iron are very important; they help in the growth of young organs, stimulating the formation of cells.—J. R. S. C.

— A LOST CHORD.—If there is no blight on Mr. Fenn's plants there is assuredly none about himself when he can still pen an article so breezy as his latest, and, I fondly hope, not his last, in the Journal. I wonder if his favourite anti-blight has anything to do with his own wonderful vitality. Does he give himself a dusting occasionally by way of a preventive against human ailments? One who would like to meet him sends him a hearty greeting which, it is hoped, he will accept, even if it comes from one guilty of "long drawn out phrases," in contrast with the brevity of the veteran.—S.

— THE DEVELOPMENT OF THE WEST INDIES.—With a view to relieving the depression in the West Indies, Mr. Chamberlain has been promoting a scheme for the development of fruit cultivation and exportation for the English market. The climate of the islands is admirably suited for the growing of Bananas, Pine Apples, Oranges, and other tropical fruits, and a large trade in these fruits has grown up of recent years with the United States. It is thought that by the establishment of a quick service of steamers under a Government subsidy large quantities of these fruits might be placed on the English market at prices which would render them within the reach of the poorest. With this object Mr. Chamberlain has been in communication with Messrs. Elder, Dempster and Co. of Liverpool and London, who propose to establish a fortnightly service of steamers to and from Liverpool, the voyage to occupy about thirteen days. It is intended, also, to develop the islands as a health resort.

— GRAND YORKSHIRE GALA.—The annual meeting of the life members and guarantors of the Grand Yorkshire Gala was held recently at Harker's Hotel, Sir Christopher Milward presiding. In the course of his introductory address the Chairman said he had to congratulate them on one of the most successful years experienced in the history of the Grand Yorkshire Gala. Proceeding, Sir Christopher proposed the election of the Lord Mayor as President for the ensuing year. Since the establishment of the Gala they had had the honour of the co-operation both of the Lord Mayor and Sheriff, but it was seldom that they were able to elect to the presidency one so closely associated with the management of the Gala as the present Lord Mayor, who had served them as vice-chairman. The motion, seconded by Mr. Alderman Foster, was carried by acclamation. The re-election of Sir Christopher Milward as Chairman of the Council was moved by the Lord Mayor, who referred to the excellent manner in which Sir Christopher had discharged the duties, adding that there was no member of the Council so capable of filling the position, or who possessed such a thorough knowledge of the working of the various Committees. The Sheriff, in seconding the nomination, hoped he would live long to serve them in that position. The resolution was adopted unanimously. The Chairman appropriately acknowledged his re-election. Mr. Joseph Wilkinson was unanimously re-elected Treasurer, Mr. C. W. Simmons Secretary, and Messrs. Pearson and Taylor Auditors. Mr. T. G. Hodgson proposed that the sum of £650 be granted to the Floral Committee. The amount was the same as that granted last year, but he understood that the Committee contemplated a revision of the schedule, which was not up to date. The sum of £230 was granted for the musical arrangements, £120 for the firework displays, £60 for balloon ascents, and £175 for the entertainments. Mr. Hugh Low, of the firm of Messrs. Hugh Low & Co., London, was elected a life member.

— **THE DEEP ROOTING OF ONIONS.**—In reading "Cassell's Popular Gardening" on the culture of Onions, I find it is stated that ample means have been afforded for testing that Onion roots have penetrated to the depth of 6 feet. I shall be glad to have as much information on the subject as any readers can obligingly give me. —**ANXIOUS TO LEARN.**

— **LA SEMAINE HORTICOLE.**—With the issue, dated January 7th, our Belgian contemporary commences a new stage of existence with an extended title and a broader base of operations. Hitherto it has been in the hands of Mons. Lucien Linden, but has now passed to a company, whose endeavour will be to materially increase its utility to continental horticulturists. We hope the promised efforts will be crowned by success. The full title of the periodical will be "La Semaine Horticole et Revue des Culture Coloniales."

— **CHESTER PANTON SOCIETY.**—The first lecture for the present session was delivered in the Grosvenor Museum on Saturday evening last by Mr. E. Stubbs, gardener to Mrs. Hudson, Bache Hall, who took for his subject "Chrysanthemums." In the absence of the President, the chair was occupied by Mr. J. Jackson, Capenhurst. Mr. Stubbs has for some years been recognised as one of the champion growers in the district, having several times carried off premier honours for Chrysanthemums at the Society's annual exhibition. It was mainly from an exhibitor's point of view that Mr. Stubbs dealt with his subject, and in the course of his remarks he explained exactly his methods of culture, and gave valuable hints, which were much appreciated by other growers who were present. An interesting discussion followed, and at the close a hearty vote of thanks was accorded to the essayist for his very practical paper.

— **THE FATE OF CROHAM HURST.**—On a recent morning, under the auspices of the Selborne Society, a demonstration was held on the summit of Croham Hurst to protest against the site being permitted to fall into the hands of the builders, and to urge its acquisition by the town of Croydon. Croham Hurst is a finely wooded elevation in the southern suburbs of Croydon, whence very extensive views of the surrounding country may be obtained, and which, next to the Shirley Hills, is probably the most favourite place of resort in the spring and summer time with the inhabitants. The land belongs to the Whitgift Trust. Of late rumours have been current in the town that there was a probability of that portion of the estate which borders on the hillside being laid out for building purposes, and, it being felt by some of the townspeople that the erection of houses in the immediate vicinity of the Hurst was highly objectionable, the meeting was called to denounce the proposal. The Chairman was Mr. E. A. Martin, the Hon. Secretary of the Selborne Society. A resolution was passed calling upon the Corporation to take steps to secure Croham Hurst in perpetuity for the use of the inhabitants of Croydon, and strongly deprecating any building operations in the locality.—("Daily Chronicle.")

— **WILD BIRDS IN LONDON.**—There is a variety of bird-life native to London far greater than most people, we fancy, are aware. A walk in any of our larger parks, especially in the neighbourhood of the lakes, or upon Hampstead Heath, will reveal it to us. Many of the waterfowl on our ornamental waters are wild. The Parks Committee of the County Council stocks its lakes and islands with fowl, but many wild ducks and other species of water birds come in addition to these. The kingfisher, too, is a frequent visitor, and actually breeds in London. The cuckoo and the magpie will be noted; but the latter, because of the mischief it does, is not too heartily welcomed by the park authorities. Hampstead Heath is the favourite London resort of the goldfinches; while their relatives, the greenfinches, favour St. James's Park, and the bullfinch and chaffinch are seen in several town quarters. The linnets, unfortunately, are leaving us, and the larks have already left. Their desertion of town is chiefly a matter of suitable food. The tomtit, most amusing of small birds, was retained in Battersea Park by Mr. Sexby, the chief of the Parks Department, who adopted the device of hanging little pieces of fat on the trees. Then, too, we have blackbirds—there was a white specimen haunting our parks a year or two ago—rooks, jackdaws, most solemn of all birds, wagtails, with their curious dipping flight, and of course the robins, wrens, starlings, and wood pigeons. The worst enemy of the London bird is, unfortunately, one against whom Acts of Parliament afford very little protection. He has no proper respect for the law. If it were not for the prowling cat bird life in London would probably be even more varied and plentiful than it is. There are enormous numbers of stray cats in town; and the parks are a happy hunting ground for them. Mr. Sexby reports that in Finsbury Park, where the waterfowl are located on the island, cats will take to the water and swim across to get at their prey.

— **"GARDENING FOR ALL."**—A copy of the second edition of the useful little book, "Gardening for All," has been sent to Her Majesty the Queen by the author, Mr. James Udale, F.R.H.S., Droitwich, the chief gardening instructor for Worcestershire. The copy sent to Her Majesty has been graciously accepted and acknowledged by Lord Edward Pelham-Clinton.

— **FRENCH BEAN SYON HOUSE.**—This proved one of the most prolific varieties cultivated in pots for main crops indoors last year. The plant possesses a good constitution, does not grow so tall as some, and the pods, which are most freely produced, are of good size. Until last season the variety to me was known only by name, but so favourable was the impression made under its first trial, that it will in future claim the notice which its merits deserve, and I strongly recommend it to the notice of others, to whom it may be, except in name, a stranger.—W. S.

— **PEAR PRESIDENT BARABE.**—When at Gunton Park in August I noted this Pear growing against a south wall, where it was carrying a full crop of shapely hardy looking fruit. I have to-day, January 10th, had an opportunity of testing its quality. It is of buttery texture, sweet and juicy, and of a pleasing flavour. For use in January President Barabe ought to be valuable too, as really good Pears are then scarce. As a cordon on the Quince stock planted in a warm situation this year should prove a success.—E. M.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS, 1898.**—This has been the driest year since 1887, and has only been exceeded twice since 1876—viz., 1884, total rainfall 18.31 inches; and 1887, total rainfall 19.46 inches; and it has been the warmest year since 1893, with sunshine much above the average. The prevailing direction of the wind was W. on 116 days. The total rainfall was 19.63 inches, which fell on 160 days, and is 7.16 inches below the average for the year. The greatest daily fall was 0.96 inch, on August 6th. Barometer (corrected and reduced), highest reading 30.629 inches, on January 15th, at 9 P.M.; lowest reading 28.795 inches, on November 25th, at 9 A.M. Thermometers, highest in the shade 88°, on September 8th; lowest 20°, on February 21st. Mean of daily maxima, 56.75°; mean of daily minima, 41.53°. Mean temperature of the year, 49.14°; lowest on the grass 13°, on February 21st; highest in the sun 150°, on September 8th. Mean temperature of the earth at 3 feet, 49.84°. Total sunshine 1581 hours 20 min. There were sixty sunless days.—H. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

— **BOHEMIAN FORESTS.**—Bohemia is one of the most populous countries in the world; its climate is relatively cool with rather severe winters, and therefore much fuel is used, which is largely taken from the forests covering the mountain sides. Yet after the many centuries during which these forests have furnished fuel and building material for a dense population, they retain nearly their original area. This, says Consul Mahin, is due to the forethought of the Government in ordaining that as trees were cut down others should be planted to fill the vacancies. Vast stretches of dense forests cover the mountain slopes; the wood is mostly pine. Trees are constantly being cut, but wherever a clearing is made small trees are planted the next spring. What at a distance may appear to be a bare spot in the forest, on a nearer view is found to be covered with little trees set out in symmetrical rows, and varying in height according to the length of time since they were planted. The new trees are raised from the seed in small enclosures scattered in the mountains, and are thence transplanted.—("Journal of the Society of Arts.")

— **A PLAGUE OF LOCUSTS AT KIMBERLEY.**—A correspondent, under date of November 17th, 1898, writes to a contemporary:—"Locusts have been with us since Monday, and for four days a continuous unbroken stream of little brown insects, a little larger than a bee, with legs like grasshoppers, have been hop, hop, hopping past my door. They show as yet absolutely no sign of diminishing in numbers. They go steadily on, and all in the same direction—north. The streets running east and west are comparatively free from them—a few millions certainly do divert their course into them for a little, but merely, it would appear, to have a brief rest before rejoining the maddening throng to hop on, and on, and on—whither? If we leave our gate open they sweep into our garden, in which is a tree I wanted to save. I have bathed it in tar, in paraffin, in disinfectant—they all appear to whet their appetites. It takes money, patience, and trouble to make a respectable garden in this place, and now the locusts, just at the beginning of the summer, will eat up everything. It would be comic were it not for the pathos of it, to see women spending their days in brush, brush, brushing, with as hopeless a task before them as the great Mrs. Partington, at the inflowing sea of locusts, trying to protect their gardens from the rising tide. There is a ditch round the public gardens, and fires are burned in it, into which the locusts walk in millions."



ARCHIE RAY.

THOUGH the Chrysanthemum fever has long passed its highest point for another season it will not be out of place to give another photograph reproduction of an English sport. This (fig. 14) represents Archie Ray, which visitors to the National Chrysanthemum Society's meeting in November will remember was so excellently shown. The variety is a sport from the well-known Mdle. M. A. de Galbert, and is of exceptional promise. The flowers are primrose yellow in colour, and have long broad incurving florets in the centre with recurving outer florets, and partake largely of the character of the parent, but have also a striking resemblance to the chastely beautiful Mdle. Thérèse Rey. The habit of the plant leaves little to be desired, and it is said that good flowers can be secured from any bud. This sport originated with Messrs. W. Ray & Co., Mount Pleasant Nurseries, Teynham, Kent, in 1896; it is now quite fixed, and should become popular both for general purposes as well as for exhibition.

"LE CHRYSANTHEME."

As was the case last year, the December number of the French N.C.S. Journal is an unusually bulky one. The list of new members brings the total up to over 500, an achievement of no little importance, considering the Society is as yet only a young one. Among the various items of interest may be mentioned the concluding portion of M. Salète's report of his visit to the Aquarium Show last November. There are also reports of shows at Troyes, Algiers, Cette, Nîmes, Langres, Grenoble, Geneva, and other places. The third Conference and Exhibition, held under the auspices of the Society, are fully dealt with; the papers and discussions on the various subjects of interest that were treated occupying a large portion of the number. A statement of receipts and payments for the past year shows a balance in hand of nearly £50.—P.

NATIONAL CHRYSANTHEMUM SOCIETY.

CLASSIFICATION OF VARIETIES.

SOCIETIES in affiliation with the N.C.S. are desired to print the following lists in their schedules of prizes as binding upon exhibitors, and thus relieve both judges and committees of much vexation arising from disputes as to the distinctness or otherwise of certain popular varieties much exhibited. It will be understood that in the case of societies which may not be desirous of coming under the operation of these lists, and not printing them in their schedules, that they are not binding upon the exhibitors at such societies' shows; but it is earnestly desired that all affiliated societies may adopt them, and make them obligatory upon their exhibitors.

The following list of varieties which have been distributed since the publication of the Jubilee edition of the Society's official catalogue in 1896 are classed as—

INCURVED VARIETIES.

Ada Owen	Miss Phyllis Fowler
Austin Cannell	Miss Violet Foster
Baronne de Veillard	Mrs. Airdrie
C. S. Bates	Mrs. Col. Goodyear
Chrysanthémiste Bruant	Mrs. F. Hepper
Dome d'Or	Mrs. Gerald Williams
Duchess of Fife	Mrs. H. J. Jones
Ernest Cannell	Mrs. James Eadie
General Maurie	Mrs. N. Molyneux
Golden Gem	Mrs. Sarah Owen
Golden Nugget	Mrs. W. Howe
Hanwell Glory	Mr. J. Kearns
Harold Wells	Mr. James Murray
Ialine	Mr. M. Russell
Ideality	Mons. Desblanc
John Miles	Owen's Crimson
King of Orange	Pearl Palace
Lady Isabel	Percy Surman
L'Améthiste	Perle Dauphinoise
Le Marcadeon	R. D. Douglas
Leonard Payne	Rena Dula
Lyne Junior	Rose Owen
Ma Perfection	Sir Trevor Lawrence
Madame Edmond Roger	The Egyptian
Madame Ferlat	Thomas Singleton
Mdle. Lucie Faure	Topaze Orientale
Miss Annie Hill	Triomphe d'Eve
Miss Dorothy Foster	W. Carpenter
Miss Godsmarek	Yvonne Desblanc
Miss Louise D. Blac	

The following are classed as—

JAPANESE INCURVED.

Duke of Wellington

President Nonin

Swanley Giant

SYNONYMOUS, OR TOO-MUCH-ALIKE VARIETIES.

The following is a list of varieties of Chrysanthemums, either classed as synonymous, or as too-much-alike, or which at times so nearly approach each other in general appearance that they *must* not be shown on the same stand.

INCURVED VARIETIES.

C. H. Curtis	John Salter
Major Bouaffon	Mr. Howe
Duchess of Fife	Lady Dorothy
Mrs. Airdrie	Charles Gibson
Empress of India	Lord Alcester
Lady H. St. Clair	Princess Imperial
Mrs. Cunningham	Miss M. A. Haggas
Snowball	Richard Parker
White Queen	Mrs. George Rundie
Golden Empress of India	Mrs. George Parnell
Bruce Findlay	Mrs. W. C. Egan
Golden George Glenney	Countess of Warwick
Mrs. Dixon	Princess of Teck
Mrs. C. H. Glover	Charles Shoesmith
John Doughty	Christmas Number
Mrs. Robert Mudie	Princess of Wales
Bronze Queen of England	Beauty of St. John's Wood
John Lambert	Mrs. Heale
Golden Queen of England	White Princess
Emily Dale	Queen of England
Emily Dale Improved	Blush Queen of England

JAPANESE VARIETIES.

Australie	Pride of Madford
Mr. T. Carrington	Beauty of Teignmouth
G. J. Warren	Sunflower
Yellow Madame Carnot	Swanley Yellow
Madame Louis Remy	W. Slogrove
Lady Ellen Clarke	Improved W. H. Lincoln
Mrs. C. Blick	T. Selwood
Mrs. Richard Jones	

HAIRY VARIETIES.

Enfant des deux Mondes	Hairy Wonder	Esau
White Louis Boehmer	R. M. Gray	Princess Eua

The attention of exhibitors is particularly called to the foregoing list of too-much-alike varieties bracketed together, which should be carefully examined previous to staging blooms for competition.—RICHARD DEAN, V.M.H., *Secretary*.

FRENCH CERTIFICATED CHRYSANTHEMUMS.

AT the recent Paris show there was a large number of novelties certificated, more perhaps than it would be useful to mention here. The principal exhibitors to whom these awards were made were MM. Delaux, Nonin, Ragout, W. Wells, Debrié, Chantrier, Rémy, Langlois, Scalarandis, Calvat, and De Reydellet. This show, it will be remembered, is held by the National Horticultural Society of France. The French N.C.S. has held several meetings of its Floral Committee, and a goodly number of these distinctions have been awarded, the principal exhibitors being MM. Bonnefous, Calvat, De Reydellet, Rozain, Bouchardat, Delaux, Chantrier, Delvert, Nonin, Scalarandis, Boric, Charmet, and Poncet. The show at Lille was also the occasion of awarding a large number of certificates, the following growers being successful at this northern show:—MM. Calvat, Wells, Cordonnier, De Reydellet, Mulnard, Chantrier, and Bonnefous.—C.

CHRYSANTHEMUMS IN THE NORTH OF FRANCE.

It was in the north of France that big bloom culture first made known the merits of the Chrysanthemum as an exhibition flower to the French public, and the recent show at Lille has no doubt given a further impetus to its cultivation. The "Nord Horticole," a bright and interesting little monthly, largely devoted to Chrysanthemum matters, and the official organ of the Northern French Chrysanthemum Society, contains a lengthy account of the Lille Exhibition in November last, and is illustrated with ten interesting photographic reproductions of exhibits and views. There is also a translation of an article on the rust and other matter appropriate to the season.—P.

THE N.C.S. MEDAL AWARDS.

In the report of the past year's work of the Royal Horticultural Society I observe, in relation to the vexed medal award question, the Council suggests, though in veiled terms, that trade groups at the Drill Hall should not be too readily awarded medals. I do not assume

Practically it is difficult to prevent trade growers from exhibiting produce grown by others for them. Nothing is more common than for traders who have special stocks of their own to pay other persons to grow the same for them, seeing that it is often practicable for others to present them in superior form. Were these things exhibited



FIG. 14.—ARCHIE RAY.

that the Executive of the N.C.S. would be likely to follow the lead of the R.H.S. in this matter; but were it the rule that no awards of medals be made to such groups in either case there would be no room for the grumbling of which I have complained as disfiguring several Chrysanthemum trade lists.

for prizes as actually grown by the exhibitor it would be immoral, but when simply presented as examples of varieties or stocks produced under the best culture no one can complain. Of course, if in such case anyone were to publish that all these exhibits "were grown by us personally, and in our own establishments," that would be false.

No honourable trader, however, does that. The real evil lies in the practice on the part of executives in making such very questionable awards as medals to trade exhibits at all, especially when it is found they form the ground of assertion in catalogues that give pain to many readers.

I have a new list and a long letter in from one trader. I see in the list that he again refers to this disagreement with the action of the N.C.S.; and whilst I again condemn the introduction of any personal quarrel into a trade list, I can but say that every word found in the complaint justifies my advice to wash hands entirely of any association that breeds so much of ill feeling and dissatisfaction. The popularity of the Chrysanthemum and its culture does not depend on a show or two at the Royal Aquarium. There are very many others not less worthy of consideration.

I observe that the esteemed Chairman of the N.C.S. Executive retires from the office. How soon these officials have enough of it! And no wonder, when what should be a real National Society is controlled, not more in the interests of the Chrysanthemum than that of an entertainment company.—A. D.

CHRYSANTHEMUM EXHIBITS AND MEDALS.

It was not my intention to enter the controversy initiated by "A. D.," who apparently is one of those who consider themselves critics on all subjects. Surely it is a little presumptuous of "A. D.," or anyone, to say what should or should not appear in a catalogue. We may next expect to be told how many varieties we may catalogue, and those only of certain raisers, what colour its cover may be, and so on. I have always understood that catalogues were the property of the firms who published them. May I suggest to "A. D.," that he should use his pen against "cliquism" and jobbery wherever they may exist, he would then be doing horticulture a service. Personally, I must admit that what I wrote in compiling my catalogue was much against my inclination, for I knew there would be some who would consider "trade jealousy" was at the bottom of it all, but the circumstances of the case left no other course open to me, and I said as little as I could.

"A. D." now suggests that the proper course for Chrysanthemum traders who object to certain proceedings is for them to "wash their hands of a body that acts contrary to their desires, or, failing that, to bring forward complaints and objections at committee meetings." The first proposition is presumably what a certain section might desire, and I can hardly believe that "A. D." has joined this party. As to the second proposition, it has been tried and found useless. Letters may be written and explanations asked for, but at the meeting someone is quick to suggest that the letter lie on the table, and so the complaint is "snuffed out." Other letters, I am credibly informed, are never placed before the Committee. Will "A. D." take the trouble to inquire why the genial and straightforward Chairman of the N.C.S. has intimated his intention of resigning the position that he occupies so creditably? But we will suppose that our complaints are attended to, and explanations are tendered; of what service are they unless they are given the same amount of publicity as are the circumstances of which we complain?

I do not imagine that anyone values the various medals primarily for their intrinsic worth. I am sure I do not, but it is the value that the medals are supposed to give the exhibits that is aimed at. I have known a medal awarded to an exhibit of Chrysanthemums not a bloom of which was grown by the exhibitor. Much more could be said on this matter. I would, however, like to add that Chrysanthemum specialists are not alone in winning medals in this way, for I could mention a firm which exhibits at important shows collections of Carnation plants which are sent from the Channel Isles direct to the shows at which they are awarded medals.—W. J. GODFREY.

[We do not know what our correspondent has said in his catalogue, but he is entitled to say what he likes. Most business men know, or are not long in finding out, what best suits their purpose to publish. The rules and regulations of all societies are not alike. In certain classes the prizes are given for the products and skill in arranging them for making a great spectacular display, and not to the growers of the materials employed. An exhibitor is not open to reproach when he acts within the rules; and in clear cases of infringement formal protests, entered in precise form and within the stipulated time, receive in all societies with which we have been officially connected the careful attention of the committee. We have received more complaints relative to the awarding of prizes at the N.C.S. shows than from exhibitors at all other shows in the kingdom, but as the rules and regulations of the N.C.S. are neither sent to us officially nor by the complainants we have no opportunity for testing the merits of the several allegations. Catalogue statements are in their very nature *ex parte*, and there is an alternative side to every question in dispute. We are not prepared to admit that the Committee of the N.C.S. would sanction a proved case of injustice as against any exhibitor. If such outrages should be permitted by any society it would speedily be on the down grade in a dodgery hating country.]

ROYAL HORTICULTURAL SOCIETY.

THE COMMITTEES FOR 1899.

FULL particulars of the exhibitions of the Society can be had from the "Arrangements for 1899," in which are also given lists of the various committees, and these we reprint for the benefit of our readers.

SCIENTIFIC COMMITTEE.

Chairman.—Sir J. D. Hooker, K.C.S.I., C.B., F.R.S., V.M.H., Sunningdale.
Vice-Chairmen.—Dyer, Sir W. T. Thiselton, K.C.M.G., F.R.S., Royal Gardens, Kew.

Foster, Prof. M., V.M.H., Sec. R.S., Great Shelford, Cambridge.
Masters, Maxwell T., M.D., F.R.S., &c., Mount Avenue, Ealing, W.

Hon. Secretary.—Rev. Prof. G. Henslow, M.A., V.M.H., F.L.S., 80, Holland Park, W.

Allen J., Park House, Shepton Mallet.

Baker, J. G., F.R.S., Royal Gardens, Kew.

Balfour, Prof. I. B., F.R.S., V.M.H., Botanic Gardens, Edinburgh.

Bonavia, Dr. E., Westwood, Richmond Road, Worthing.

Burbidge, F. W., M.A., V.M.H., Trinity College Gardens, Dublin.

Church, Prof. A. H., M.A., F.R.S., Shelsley, Kew Gardens.

Darwin, Francis, F.R.S., Wychfield, Huntingdon Road, Cambridge.

Dod, Rev. C. Wolley, M.A., V.M.H., Edge Hall, Malpas, Cheshire.

Elwes, H. J., F.L.S., V.M.H., Colesborne, Andoversford, Glus.

Engleheart, Rev. G. H., M.A., Appleshaw, Andover.

Farmer, Prof. J. B., M.A., Royal College of Science, S. Kensington.

Frankland, E., F.R.S., The Yews, Reigate Hill, Reigate.

Godman, F. Du Cane, F.R.S., 10, Chandos Street, Cavendish Square.

Im Thurn, E. F., Gov. Admin., N.W. District, British Guiana.

Lindsay, R., Botanic Gardens, Edinburgh.

Llewelyn, Sir J. T. D., Bart, F.L.S., Penllergaer, Swansea.

Lynch, R. Irwin, A.L.S., Botanic Gardens, Cambridge.

Maxwell, W. H., Munches, Dalbeattie, N.B.

McLachlan, R., F.R.S., Westview, Clarendon Road, Lewisham, S.E.

Michael, A. D., F.L.S., Cadogan Mansions, Sloane Square, S.W.

Morris, D., C.M.G., M.A., F.L.S., D.Sc., Imp. Agri. Dept., Barbados.

Müller, Hugo, Ph.D., F.R.S., 13, Park Square East, Regent's Park.

Oliver, F. W., D.Sc., F.L.S., 2, The Vale, Chelsea, S.W.

Plowright, C. B., F.L.S., 7, King Street, King's Lynn.

Russell, W. J., F.R.S., Ph.D., 34, Upper Hamilton Terrace, N.W.

Scott, D. H., M.A., Ph.D., F.R.S., F.L.S., The Old Palace, Richmond, S.W.

Sutton, A. W., V.M.H., F.L.S., Reading.

Veitch, H. J., F.L.S., King's Road, Chelsea, S.W.

Ward, Prof. Marshall, F.R.S., Botanical Laboratory, Cambridge.

Wilson, Geo. F., F.R.S., V.M.H., Heatherbank, Weybridge Heath.

FRUIT AND VEGETABLE COMMITTEE.

Chairman.—Crowley, Philip, F.L.S., Waddon House, Croydon.

Vice-Chairmen.—Balderson, H., Corner Hall, Hemel Hempstead.

Bunyard, Geo., V.M.H., The Royal Nurseries, Maidstone.

Rivers, T. Francis, V.M.H., Sawbridgeworth.

Secretary.—Wright, S. T., R.H.S. Gardens, Chiswick.

Barron, A. F., V.M.H., Sutton Court Road, Chiswick, W.

Basham, J., Fair Oak, Bursaleg, Newport, Mon.

Bates, W., Poulett Lodge Gardens, Twickenham.

Bennett, W., Rangemore Park Gardens, Burton-on-Trent.

Cheal, Joseph, Crawley, Sussex.

Crump, W., V.M.H., Madresfield Court Gardens, Malvern.

Dean, A., 62, Richmond Road, Kingston, S.W.

Divers, W. H., Belvoir Castle Gardens, Grantham.

Dunn, Malcolm, V.M.H., The Palace Gardens, Dalkeith, N.B.

Empson, W. J., Ampthill House Gardens, Beds.

Farr, W., Spring Grove House Gardens, Isleworth.

Fife, Robert, Dobbie's Nurseries, Orpington, Kent.

Gleeson, W., Warren House Gardens, Stanmore.

Herrin, C., Dropmore Gardens, Maidenhead.

Iggulden, W., North View, Frome, Somerset.

Lane, Fred. Q., Berkhamsted.

McIndoe, James, V.M.H., Hutton Hall Gardens, Guisborough.

Miles, G. T., Wycomb Abbey, High Wycomb.

Mortimer, S., Rowledge, Farnham, Surrey.

Norman, G., Hatfield House Gardens, Hatfield.

Parker, R., Goodwood, Chichester.

Pearson, A. H., The Nurseries, Chilwell, Notts.

Pope, W., Highclere Gardens, Newbury.

Poupart, W., Marsh Farm, Twickenham.

Reynolds, G., The Gardens, Gunnersbury Park, Acton.

Saltmarsh, T. J., The Nurseries, Chelmsford.

Shaw-Baker, Dr. E., The Cedars, East Grinstead.

Smith, James, V.M.H., The Gardens, Mentmore, Leighton Buzzard.

Veitch, J. H., King's Road, Chelsea.

Veitch, P. C. M., The Royal Nurseries, Exeter.

Wilks, Rev. W., M.A., Shirley Vicarage, Croydon.

Willard, Jesse, Holly Lodge Gardens, Highgate, N.

Woodward, G., Barham Court, Teston, Maidstone.

Wright, John, V.M.H., 8, Rose Hill Road, Wandsworth, S.W.

Wythes, G., V.M.H., Syon House Gardens, Brentford.

FLORAL COMMITTEE.

- Chairman.*—Marshall, William, Auchinraith, Bexley.
Vice-Chairmen.—Fraser, John, V.M.H., The Nurseries, South Woodford.
 Paul, George, V.M.H., The Old Nurseries, Cheshunt.
Secretary.—T. Humphreys, R.H.S. Gardens, Chiswick, W.
 Bain, W., The Gardens, Burford Lodge, Dorking.
 Barnes, N. F., Eaton Gardens, Chester.
 Barr, W., 12, King Street, Covent Garden, W.C.
 Beckett, E., Aldenham House Gardens, Elstree.
 Blick, Chas., The Warren, Hayes Common, Beckenham.
 Cook, E. T., 9, Fairlawn Grove, Chiswick.
 Crane, D. B., 4, Woodview Terrace, Archway Road, Highgate, N.
 Cutbush, H. J., The Nurseries, Highgate, N.
 Dean, R., V.M.H., 42, Ranelagh Road, Ealing, W.
 Drury, C. T., F.L.S., V.M.H., 25, Windsor Road, Forest Gate.
 Fielder, L. R., St. James, West Malvern.
 Fitt, J. H., The Frythe Gardens, Welwyn.
 Fraser, John, 4, Willow Cottages, Kew.
 Gordon, G., V.M.H., Endsleigh, Priory Park, Kew.
 Herbst, H., V.M.H., Stanmore, Kew Road, Richmond.
 Howe, W., Park Hill Gardens, Streatham Common.
 Jeffries, C., Boston House Gardens, Brentford.
 Jenkins, E. H., Queen's Road, Hampton Hill, Middlesex.
 Jennings, J., Ascott Gardens, Leighton Buzzard.
 Jones, H. J., Ryecroft, Hither Green, Lewisham.
 Ker, R. Wilson, Basnett Street, Liverpool.
 Laing, J., V.M.H., Forest Hill, S.E.
 Lowe, R. B., Ashridge Gardens, Berkhamsted.
 McLeod, J., Dover House Gardens, Roehampton.
 May, H. B., Dyson's Lane, Upper Edmonton.
 Mawley, E., Rosebank, Berkhamsted.
 Molyneux, E., V.M.H., Swanmore Park Gardens, Bishop's Waltham.
 Nicholson, G., V.M.H., Royal Gardens, Kew.
 Pawle, J. D., 12, Stanley Gardens, Willesden Green, N.W.
 Pearson, C. E., Chilwell, Nottingham.
 Salter, C. J., Woodhatch Gardens, Reigate.
 Sanders, T. W., 124, Embleton Road, Lewisham.
 Selfe-Leonard, H., Hitherbury, Guildford.
 Stevens, Geo., St. John's Nursery, Putney.
 Thomas, Owen, V.M.H., Royal Gardens, Windsor.
 Turner, H., V.M.H., Royal Nurseries, Slough.
 Walker, J., Ham Common, Surrey.

ORCHID COMMITTEE.

- Chairman.*—Veitch, H. J., F.L.S., Royal Exotic Nursery, Chelsea, S.W.
Vice-Chairmen.—Courtauld, Sydney, Boeking Place, Braintree.
 Lawrence, Sir Trevor, Bart., 57, Prince's Gate, S.W.
 Schröder, Baron, V.M.H., The Dell, Staines.
Hon. Sec.—O'Brien, James, V.M.H., West Street, Harrow-on-the-Hill.
 Ashworth, E., Harefield Hall, Wilmslow, Cheshire.
 Balfour, Prof. Bayley, V.M.H., Edinburgh.
 Ballantine, H., The Dell Gardens, Staines.
 Bond, T. W., Elstead House Gardens, Godalming.
 Brooman-White, R., Arddarroch, Garelochhead, N.B.
 Chapman, H., Cambridge Lodge, Flodden Road, Camberwell.
 Colman, J., Gatton Park, Surrey.
 Cobb, W., Broadwater Down, Tunbridge Wells.
 Cookson, Norman C., Oakwood, Wylam-on-Tyne.
 Crawshay, De Barri, Rosefield, Sevenoaks.
 Douglas, James, Edenside, Great Bookham.
 Fowler, J. Gurney, Glebelands, Woodford.
 Gabriel, J. T., 32, Palace Road, Streatham Hill.
 Hill, E., Tring Park Gardens, Tring.
 Jacomb, F. C., Cheam Park, Surrey.
 Jaques, J., Waddesdon Manor Gardens, Aylesbury.
 Latham, W. B., Botanic Gardens, Edgbaston, Birmingham.
 Law-Schofield, G. W., New Hall Hey, Rawtenstall, Manchester.
 Little, H., Baronsalt, The Barons, E. Twickenham.
 Mason, Major, The Firs, Warwick.
 Moore, F. W., V.M.H., Glasnevin.
 Outram, A., 7, Moore Park Road, Fulham.
 Pitt, H. T., Rosslyn, Stamford Hill.
 Pollett, H. M., Fernside, Bickley, Kent.
 Protheroe, W. H., 67, Cheapside, E.C.
 Sander, F., V.M.H., St. Albans.
 Smee, A. H., Wallington, Surrey.
 Statter, T., Stand Hall, Whitefield, Manchester.
 Thompson, W., Walton Grange, Stone, Staffs.
 Thorne, F. J., The Gardens, Sunningdale Park.
 Watson, W., Royal Gardens, Kew.
 White, W. H., Burford Lodge Gardens, Dorking.
 Williams, H., Victoria Nurseries, Holloway, N.
 Winn, C., The Uplands, Selly Hill, near Birmingham.
 Young, W. H., Clare Lawn Gardens, East Sheen, S.W.

NARCISSUS COMMITTEE.

- Chairman.*—Bennett-Poë, John T., 29, Ashley Place, S.W.
Vice-Chairmen.—Baker, J. G., F.R.S., V.M.H., Royal Herbarium, Kew.
 Dod, Rev. C. Wolley, M.A., V.M.H., Edge Hall, Malpas, Cheshire.
 Engleheart, Rev. George H., Appleshaw, Andover.
Hon. Secretary.—Serase-Dickins, C. R., Coolhurst Park, Horsham.
 Barr, R., 12, King Street, Covent Garden, W.C.
 Boseawen, Hon. J., Tregye, Perranwell.
 Bourne, Rev. S. E., Dunston Vicarage, Lincoln.
 Burbidge, F. W., M.A., V.M.H., Trinity College Gardens, Dublin.
 Cammell, M., Loxwood House, Billingshurst, Sussex.
 Cowan, C. W., Valleyfield, Penicuik, Midlothian.
 Foster, Prof. M., V.M.H., Sec. R.S., Shelford, Cambridge.
 De Graaf, S. A., Leyden, Holland.
 Goldring, W., 34, Gloucester Road, Kew.
 Kingsmill, A., The Holt, Harrow Weald, Stanmore.
 Krelage, J. H., Haarlem, Holland.
 Leichlin, Max, Baden-Baden.
 MacMichael, Rev. C., Walpole Rectory, Wisbech.
 Marsh, Rev. T. H., Cawston Rectory, Norfolk.
 Milne Readhead, R., Holden Clough, Bolton-by-Bowland, Clitheroe.
 Moore, F. W., V.M.H., Royal Botanic Gardens, Glasnevin, Dublin.
 Pope, J., The Erics, King's Norton.
 Smith, J. A. Dorian, Tresco Abbey, Scilly.
 Sydenham, R., 190, Bristol Road, Birmingham.
 Titheradge, G. T., Savage Club, Adelphi.
 Vilmorin, Henry L. De, Quai de la Mégisserie, Paris.
 Walker, James, Ham Common, Surrey.
 Ware, Walter T., Inglecombe Nurseries, near Bath.
 Wilks, Rev. W., Shirley Vicarage, Croydon.
 Willmott, Miss, V.M.H., Warley Place, Great Warley, Essex.

The Narcissus Committee will meet in the Drill Hall, James Street, Victoria Street, Westminster, on the following dates, at twelve o'clock noon—viz., March 14th, 28th, April 18th, and May 2nd, 1899.

SWEET PEAS.

SWEET PEAS are now most highly appreciated in the flower garden. I can well remember twenty-five years ago hearing the cottagers talk a lot about their "Posy Peas." These were short-stemmed, small-leaved, and small-flowered varieties, about 3 feet high, and the flowers were mostly dark purple. What a contrast to those of to-day. Last year our Peas ran 7 to 9 feet high, fell over the stakes, and grew up. There were such stems and flowers—indeed, varieties like Prince Edward of York had stems 12 and 14 inches long, with four flowers on each stem, great giants, and yet charmingly graceful.

To secure the best results with Sweet Peas they should be sown in February, in 3 inch pots of good soil, with six seeds in a pot. Put the receptacles in a cool greenhouse or frame where there is slight warmth, and admit fresh air after germination has taken place, and when 2 inches high move the young plants to a cold frame and keep well aired preparatory to planting out outdoors when about 4 or 5 inches high. The ground should, if possible, have some shelter from high winds, but not be so shady as to draw them in any way. Add good manure to the garden soil, as it is impossible to get fine large flowers from plants grown on poor soil. Early in April, if the weather and ground be suitable, they should be transferred from the pots to the rows, planting each potful about 9 inches asunder in the rows, which should be 6 feet apart. This will give them room to develop, and the sooner stakes are placed the better, so as to afford a little shelter. Immediately flowering commences a good mulching of manure will help to extend the season and give larger flowers, but seed pods must not be allowed to remain on the plants.

The following are some of the best varieties selected when in bloom last July. Coquette is cream in colour, and has large flowers and foliage; Countess of Shrewsbury, with pale pink standards and white wings, is free and very charming; Duke of Sutherland is a fine dark; Mars has dark red flowers on long stems, and is valuable for cutting purposes; Prince of Wales, a bright rose self, has long stems carrying large flowers; Aurora and Mrs. J. Chamberlain are much alike, and have white striped and flaked with rose coloured flowers; Brilliant, a fine red, produces large flowers; while Blanche Burpee is the best white yet, although a new one, Sadce Burpee, is said to be superior; Countess of Aberdeen is a delicate pink and good, but rather prone to spot in wet weather; Crown Jewel is a delightful variety with long stems; and Celestial lavender blue. Other fine ones are Duke of Clarence, deep maroon, long stems, and large flowers; Emily Eckford, white with pink feathering; Gaiety, striped, should be grown in the smallest collections; Primrose, one of the best yellows; Katherine Tracey, a lovely pink which stands the wet weather better than Countess of Aberdeen; Little Dorritt, carmine, tinted pink with white wings and long stems; Lovely, a pink with long stems and large flowers; Prince Edward of York, satiny rose standards, pale wings, very long stems, large flowers, often four on a stem; Maid of Honour, with long stems and large white flowers edged with blue, distinct and good; Queen Victoria, primrose, long stems, large flowers, strong grower; Shahzada, deep maroon, very fine; Salopian, carmine, fine large flower on very long stems; Prima Donna, pink, large flowers, fine long stems; and Triumph, orange pink standards and white wings, a noble flower on long stalks.—S. J.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL GENERAL MEETING.

The tone of the speakers at the annual meeting of the Gardeners' Royal Benevolent Institution meeting, held at Simpson's on Thursday last, was congratulatory throughout, as it well might be, considering the eminently satisfactory financial condition and the excellent manner in which the Society's affairs are conducted. As usual, Mr. Harry J. Veitch was the presiding genius, and he was supported by the Rev. W. Wilks, Dr. Maxwell T. Masters, and Messrs. G. Monro and Ranger Johnson. In addition to these, we observed Messrs. J. H. Veitch, J. Fraser, J. Hudson, R. Dean, A. Outram, W. Roupell, T. Peed, Jesse Willard, and J. H. White. After the usual formal business, the Chairman called upon the Secretary to read the report and balance sheet, which are appended.

REPORT OF COMMITTEE FOR 1898.

In presenting their annual report for the year 1898 the Committee of the Gardeners' Royal Benevolent Institution have much satisfaction in being able again to congratulate the members and subscribers on the prosperous condition of the Institution, its continued success, and the increased benefits it has been the means of conferring on a large number of old and worthy people who have been compelled to seek its assistance. At the commencement of the year 1898 there were 163 pensioners on the funds—ninety-three men and seventy-five widows, entailing an annual liability for annuities of £3060.

During the year sixteen of these have died, five of the men leaving widows, whose applications for a continuance of the pension have been carefully considered by the Committee, and their cases having been found to be in every way satisfactory and deserving they have been placed on the funds at £16 a year for life under Rule iii. 13. Their several names and ages are as follows:—1, Jane Warr, widow of Silas Warr, North Cadbury, Bath, aged seventy-one; 2, Mary Wady, widow of Michael Wady, Bakers Lane, Streatham, aged sixty-nine; 3, Euphemia Lowe, widow of Peter Lowe, Cambray, Cheltenham, aged seventy; 4, Phoebe Coleman, widow of W. Coleman, Southborough, Kent, aged eighty-one; 5, Frances A. Holmes, widow of A. H. Holmes, Kyrle Road, Wandsworth Common, aged sixty-five.

Arrangements were made in the early part of the year for celebrating the annual festival dinner in aid of the funds in June, at which the Duke of Portland had undertaken to preside. Unfortunately, through ill-health, his Grace was unable to be present, but his place was filled by Sir Oswald Mosley, Bart., who occupied the chair in his Grace's stead. The Committee desire to place on record their deep indebtedness to Sir Oswald Mosley for his great kindness in coming forward to assist the Charity in the manner he did, and for his advocacy of its claims. They desire also to express their gratitude to the Duke of Portland for very kindly promising to preside at the festival on a future occasion. The Committee would take this opportunity of tendering their sincere thanks to those friends who rendered assistance as stewards, to those who sent flowers or fruit, and to all who in any way contributed to the success of the dinner.

The Committee further desire to offer their grateful thanks to supporters in various parts of the country who have been instrumental in arranging concerts, flower stalls, the opening of gardens, &c., in aid of the Institution. They would specially tender their sincere thanks to the hon. secretaries of the several auxiliaries for the valuable services they have rendered the Institution in its work. The Committee have to report that in consequence of the expiration of their tenancy in Parliament Street they were obliged to seek fresh offices. These were most difficult to obtain in the immediate neighbourhood, but they are glad to be able to announce that they have secured suitable and more prominent offices at 175, Victoria Street, Westminster, S.W., and they are hopeful that the new address will prove advantageous to the Charity in making it more widely known.

The Committee, after much deliberation, have decided to recommend an addition of seventeen pensioners to the list—five by resolution under Rule iii. 5, and twelve by votes in the usual way. This number is six over and above the vacancies which have occurred during the past year, and will make the total number of pensioners on the list 174. The Committee are fully aware of the increased liabilities they are incurring, but they feel confident that the majority of the friends of the Institution throughout the country will endorse their action in what may be termed a "forward policy"—viz., that of assisting a larger number of applicants than perhaps some may consider they are warranted in doing with their present average income.

The Committee are very pleased to inform the subscribers to the Victorian Era Fund that its operations during the past year—the first of its existence—have been greatly beneficial to the unsuccessful candidates who were formerly subscribers of the Institution, and who are awaiting election. The total amount disbursed from the fund was £106 10s., and was apportioned as follows: Andrew Bryan, subscriber thirteen years, £9 15s.; Francis Nixon, thirteen years, £9 15s.; James Plevy, twelve years, £9; George Staples, eleven years, £8 5s.; Caroline Woods, eleven years, £8 5s.; John Gibbons, ten years, £7 10s.; James Watt, ten years, £7 10s.; Elizabeth Hackwell, nine years, £6 15s.; George Wills, nine years, £6 15s.; Alfred Barnfield, eight years, £6; Annie Hatch, eight years, £6; Lucy Mitchell, seven years, £5 5s.; Joseph Shearn, seven years, £5 5s.; Alexander Lee, five years, £3 15s.; Thomas Evans, four years, £3; William Gould two years, £1 10s.; William Thomas, two years, £1 10s.; Emma Woodward, one year, 15s.; total, £106 10s.

The Committee would again point out that the interest derived from the fund is devoted exclusively for the benefit of those candidates who have been subscribers to the Institution. The amount raised for this fund was £4075, and the Committee are very anxious to bring up the total to £5000. To do this they require £925, and towards that sum they have received during the past year £540, whilst the following gentlemen have kindly promised £50 each conditionally on the amount being obtained:—N. Sherwood, Esq., Arthur W. Sutton, Esq., Leonard Sutton, Esq., and Harry J. Veitch, Esq. Thus they require but £185 to claim these promised gifts and complete the sum of £5000, and they are confident of being able to do this before the close of the present year.

In concluding their report the Committee, with feelings of deep regret, have to refer to the losses the Institution has sustained by the death of many valued friends and supporters during the past year, amongst whom they would specially mention the late Earl of Mansfield, a Vice-President of the Institution and an annual subscriber to its funds for fifty-two years; the late Sir Henry W. Peek, Bart., also a Vice-President and an annual subscriber for thirty-two years; the late Baron Ferdinand de Rothschild, who for many years was a generous contributor to the funds, and who occupied the chair at the anniversary festival in 1887; also the late Lord Hillingdon for many years a supporter of the Charity; and the late Earl of Lathom, Chairman of the anniversary festival in 1896. The warm-hearted liberality and personal interest of these many friends will be sorely missed, and the Committee earnestly appeal for new friends and supporters to take the places of those who for many years nobly helped the Gardeners' Royal Benevolent Institution to succour those who in their old age and adverse circumstances have been obliged to seek its aid.

DR.		BALANCE SHEET, 1898.	
To Balance	...	£908	1 2
„ Deposit account	...	2415	0 0
„ Annual subscriptions	...	1496	13 1
„ Donations at annual dinner and by collecting cards	...	1516	3 1
„ Donations, Victorian Era Fund	...	540	5 0
„ Return of income tax	...	24	0 0
„ Advertisements in subscribers' list	...	41	10 6
„ Sale of office fittings	...	5	5 0
„ Dividends and interest on deposits	...	837	0 8
		£7833	18 6

CR.			
By Pensions and gratuities	...	£2892	3 11
„ Expenses of annual meeting and election	...	15	14 9
„ Secretary's salary	...	£259	0 0
„ Office assistance	...	26	10 0
„ Rent, cleaning, fire, and light	...	82	9 7
„ Printing	...	378	19 7
„ Stationery	...	125	12 6
„ Book of cheques	...	30	18 3
„ Expenses of annual dinner	...	2	1 8
„ Less tickets charged	...	191	13 4
„ Advertisements	...	111	6 0
„ Postages	...	80	13 4
„ Travelling expenses	...	3	3 0
„ Removal expenses	...	50	4 2
„ Carriage, telegrams, &c.	...	5	6 10
„ Bank charges	...	12	11 2
„ Transferring investments to new Trustees, half brokerage	...	16	19 3
„ Victorian Era Fund	...	0	3 3
„ Victorian Era Fund, on deposit	...	31	0 6
„ On deposit, general fund	...	540	5 0
„ Balance with Treasurer	...	2692	10 0
„ Balance with Secretary	...	972	1 7
	...	3	9 9
		975	11 4
		£7833	18 6

VICTORIAN ERA FUND. BALANCE SHEET, 1898.	
To Dividends on £2128 5 per cent. Great Western Railway Consol Stock	£128 4 6
„ Return of income tax	0 2 11
	£1 0 15 6
To Donations received during 1898 towards a further sum of £925 required for this fund	540 5 0
By gratuities	106 10 0
„ Unpresented cheque	1 10 9
	105 0 0
„ Cheque book	0 10 0
„ Balance in hand	25 5 6
	130 15 6
At bankers	67 15 0
Do. on deposit	472 10 0
	540 5 0

THOS. MANNING, }
THOS. SWIFT, } Auditors.
JESSE WILLARD, }

So complete, said Mr. Veitch, in moving the adoption of the report and balance sheet, were the details there given that little remained to be added. He desired, however, to emphasise one or two points, particularly the fact that the expenses generally, had, during the year just closed, been less than in any previous year since the Society's foundation.

One item in the expenses he thought might not be thoroughly understood—viz., that of £31 0s. 6d. for brokerage, which was incurred through the death of Dr. Hogg and the retirement of Mr. John Lee, necessitating the transference of investments to the new trustees, B. Schröder, Esq., and the Hon. Walter Rothschild, M.P. He added that the broker had been generous enough to charge only half fees. It might, he continued, be considered a bold step on the part of the Committee to place six more persons on the Fund than had ever previously been the case, but there could be no standing still, there must be either progress or retrogression. To maintain this high standpoint, he observed, the Committee required more funds. Mr. Veitch adverted to the prolongation of life on the part of the pensioners, and thought it might be largely due to the benefits the Institution was able to confer upon them. With a brief word on other points, Mr. Veitch resumed his seat, and Mr. J. Hill White having come forward as seconder, the adoption of the report and balance sheet was carried unanimously.

The election of officers for the ensuing year was then proceeded with, and it is superfluous to say Mr. Veitch was unanimously re-elected, as also was Mr. G. J. Ingram, both of whom made a few remarks. Dr. Masters proposed, and Mr. J. Fraser seconded, that Messrs. J. Sexby, A. Watkins, W. Iceton, and G. Norman be placed on the Committee; and that Messrs. R. A. Milligan Hogg and J. Rochford be elected in place of Messrs. H. J. Cutbush and H. Williams, who retire by rotation. This was carried. Messrs. T. Manning, T. Swift, and J. Willard were re-elected auditors. Mr. W. Denning proposed that John Collins, Chas. Goodall, Wm. Kidd, Jonathan Squibbs, and Geo. Yearsley be placed on the funds without election, and this, with Mr. Melady as seconder, was carried.

Other purely formal business having been disposed of, the customary votes of thanks closed the meeting.

DECLARATION OF THE POLL.

The result of the poll was declared at 5.12 P.M. The candidates elected, and the number of votes polled by each, are appended: Joseph Sbearn, 4829; Alexander Lee, 4826; James Plevy, 4796; Emma Woodward, 4517; Sarah Ann Sims, 4159; Caroline Wood, 4134; Annie Hatch, 3938; Thomas Cawley, 3851; George Staples, 3829; George Cragg, 3825; Alfred Barnfield, 3719; John Akehurst, 3191. All those polling 3000 votes and upwards were elected. The totality of votes polled was about 92,000, and there were no fewer than 564 spoiled votes—a serious item.

A vote of thanks to the scrutineers of the ballot and to the Chairman concluded the business.

THE ANNUAL FRIENDLY SUPPER.

About seventy persons sat down to the annual supper, which was served in an adjoining room at six o'clock. Mr. George Monro occupied the chair. Amongst the notables present were the Rev. W. Wilks, and Messrs. H. J. Veitch, J. H. Veitch, N. N. Sherwood, H. B. May, H. J. Jones, G. Bunyard, Owen Thomas, Arnold Moss, E. J. Monro, T. Rochford, P. Kay, P. Crowley, J. Asshee, and C. Poupert.

The well-served repast having been discussed with right good will, and the customary loyal toasts honoured, the Chairman proceeded to give the toast of the evening—"Continued Success and Prosperity to Our Institution." In succinct fashion Mr. Monro sketched the progress and aims of the Institution since its inauguration in 1838. He drew particular attention to the fact that the gardening press had always given their doings the fullest publicity free of charge, only an infinitesimal amount being spent on advertising. In sixty years £30,000 had been distributed to the deserving poor gardeners and their widows, and the safety of all pensions had been fully guaranteed by the investment of moneys bearing interest. This could not have been done had they relied alone on the help received from gardeners. The Victorian Era Fund was alluded to, and Mr. Monro said that as the £5000 of the original scheme had now been all collected or promised with the exception of about £180 they might consider the Fund as completed; at any rate, he felt certain that it would be completed in the course of 1899. He urged upon gardeners to join the Society. Referring to the removal of the offices to 175, Victoria Street, he said that that very afternoon they had had evidence that prominence of offices was a good thing, for a gentleman had called and left £20 anonymously in memory of Robert Fortune. In concluding his earnest and sympathetic speech Mr. Monro coupled the toast with the name of Mr. H. J. Veitch.

In responding, Mr. Veitch met with quite an ovation. He congratulated the Institution on its continued prosperity and progress, and said that if a certain cheque had been sent in three days earlier than it was the year lately closed would have shown a bigger subscription list than any other. The pensions given to the aged and infirm had worked incalculable good, and in some cases it had undoubtedly been the means of lengthening the lives of the recipients, for one had lived to the mature age of 103, despite the fact that when he was seventy-two the doctor had averred that he could not live many months. Gratified at the success of the Victorian Era Fund, Mr. Veitch proposed the formation of a "Samaritan Fund," the interest of which should be employed to help the immediate wants of candidates for pensions who had not been subscribers to the Institution. About £2000 would suffice to found such a fund. He also would like to see some alterations in the system of voting, as he thought a subscription should carry the same number of votes each year. He was glad to be able to tell them that the Earl of Derby had consented to take the chair at the annual dinner on July 28th.

In giving the toast of "Our Country Friends," Mr. Owen Thomas spoke of how difficult and delicate was the persuading of eminent men to take the chair at the important meetings. The scope of the Institution

was greatly extended by the help they received from country friends, although he was sorry to say they got exceedingly little help from Scotland, Ireland, or Wales. Mr. J. Hill White of the Worcester auxiliary, whose name was coupled with the toast, replied.

Mr. N. N. Sherwood, in his usual happy way, proposed "Our Visitors." Mr. Jeffries, Mr. Bilney, and Mr. W. E. Brooks (who came in late) responded.

Mr. Arnold Moss reminded the audience of the favour Mr. Monro had done them in presiding that evening, and he also spoke of the quiet, unobtrusive, and yet effectual way in which he had worked for the "Benevolent." Mr. Monro acknowledged in a few well chosen words, and then proposed the health of their excellent Secretary, Mr. G. J. Ingram.



FIG. 15.—MEYENIA ERECTA.

Several donations were announced during the course of the evening, and included five guineas from Mr. Arnold Moss and £10 from Mr. Osman. Both Mr. H. J. Veitch and Mr. N. N. Sherwood promised their help for the "Samaritan Fund," and Mr. W. E. Brooks announced his intention of becoming a subscriber.

Numerous songs were given, and Mr. Poupert was a particular success in this direction, obtaining a most vociferous encore for the sweet old ballad "Mary." The cornet solos by Mr. E. J. Munro formed a pleasing addition, and were much appreciated.

MEYENIAS.

THE Meyenias, "Journeyman," constitute a small genus which is closely allied to the Thunbergias, although the former are by no means so well known as the latter. The cultural requirements of the Meyenias are few. If a light rich compost of fibrous loam, peat, leaf soil, and a small proportion of well-decayed manure be employed, and the plants grown in a brisk moist stove temperature, very little difficulty will be experienced in obtaining vigorous specimens that will flower satisfactorily. A position well exposed to light, and yet sufficiently shaded in hot sunny weather to prevent the foliage being scorched, or the colour of the flowers deteriorated, is beneficial, with abundant supplies of water to the roots and on the foliage while growth is active. The plants have sometimes a tendency to become rather straggling unless a little attention is given to pruning the too greatly extended or bare shoots: but this is a matter that is very easily accomplished. As regards increasing the stock, cuttings are readily obtained, and if judiciously selected usually strike readily in an ordinary propagating frame. The moderately firm wood should be chosen, as the tender extremities of the shoots are rather liable to damp.

One of the species of shrubby habit, *M. erecta*, is represented by the engraving (fig. 15). It is a handsome plant, with dark green leaves and trumpet-shaped flowers, the corollas of which have a pale yellow tube, a throat of a deeper yellow, and a rich purple limb. It is a really useful plant, as flowers are produced nearly all through the year, a quality which distinguishes it from the other forms.

THE ORPHAN FUND SECRETARYSHIP.

I HAVE incidentally learned that it is the intention of the Committee of the Orphan Fund (but I do not know whether by that term I am to understand the General Committee, or the sub-committee charged with the duty of selection from the many candidates), purpose presenting to the general meeting of subscribers next month one name only. That would look like an effort to rule the election and to overawe the general meeting, such as would receive and merit the strongest condemnation.

When a selection committee finds at their first meeting no less than twenty candidates worthy of reservation for future consideration, it is evident that there must be many eligible ones amongst them. If eventually that body should reduce the number to five no one would complain, provided irrespective of all personal or sectional partiality. If five be returned as eligible by the selection committee, that number should be placed before the general meeting for a final selection. That is the course taken by all public bodies, and should be as carefully followed in this case.

Most certainly, if it be attempted to gag the meeting at the outset by nominating one candidate only by the Committee with the childish threat—too utterly contemptible for one moment's consideration, that if the Committee's nominee be not elected that body will resign—such threat will be treated as it deserves, and the fullest effort will be made to secure a contest, that the subscribers present may return the candidate of their choice.

I want to warn subscribers in the country districts that unless they make a big effort and come up to attend the meeting, that those subscribers of the pure gardening element present will find themselves quite overborne by the market element which is to be whipped up to a man to vote for the market favourite candidate. Once let the Fund get controlled by that element, and true gardeners will withdraw from it wholesale. The Fund was originated in the interests of the gardener proper, and not in that of a wealthy market body. I have no doubt but that the general meeting will be a very large one, and far in excess of any that have preceded.

The gardening element have in the running several first-class candidates, each one of whom is worthy of confidence and support. The Fund is without doubt passing through a grave crisis, and its future, for prosperity or for failure, may absolutely depend on who the candidate may be that will on February 17th next be elected to the important office of Secretary.—A. D.

FUNGOID PESTS AND CHRYSANTHEMUM LEAF RUST.

ON Wednesday evening, January 18th, at the Guildhall, Exeter, an excellent programme of papers for the spring session of the Devon and Exeter Gardeners' Association was commenced. The essayist for the occasion was Mr. R. W. Hodder, gardener to Mrs. Trevor Barclay of Ponsonby, Torquay, and his subject was "The Fungi Pests of Our Gardens, with some Notes on Rust in Chrysanthemums." In the course of his paper Mr. Hodder submitted that fungi must be dealt with in the same way as the Convolvulus, which, if possible, should never be allowed to have a green leaf above ground. With regard to the fungus which caused the damping of seedlings, he said that all plantlets which seemed to be in any way affected should be removed at once, as well as the soil under them upon which the mycelium or spawn of the fungus was spreading. A drier atmosphere should be maintained where the pest attacked plants under glass.

Onion mildew or blight should be taken in hand immediately it made its appearance, and if the weather was at all favourable to mildew growth means should be adopted to prevent it. For both preventive and remedial purposes plants should be dusted with soot in the morning while the foliage was damp; if the foliage was not damp enough it should be sprinkled with a fine rose, so that the soot would adhere. Some growers recommended sulphide of potassium mixed into a paste with water, and applied to the parts affected. The best course to be adopted wherever the spot pest showed itself in Carnations was to stand the plants in an airy, light position, keeping them well on the dry side by giving no more water than was really necessary to prevent flagging, while the remedy which he had found the least detrimental to the grass of the Carnation was as follows:—Dissolve 3 lbs. of sulphate of copper in 1½ gallon of boiling water, then with the liquid slake half a bushel or as much more lime as necessary, so as to secure a fine powder, and then, with an ordinary puff, dust the foliage of the plants, allowing the powder to remain forty-eight hours, and then syringing and, if desirable, repeating the process. Another remedy was spraying the plants with a solution of sulphide of potassium, obtained by placing ½ oz. of sulphide in 5 gallons of water.

With regard to Potato disease, Mr. Hodder urged that on ground where a crop had grown, and there had been any appearance of the disease, everything that remained of the crop after the tubers had been removed should be burnt, and not allowed to remain upon the land, with opportunity thereby for the whole of the spores of the fungus to drop away from the decaying stalks into the soil to await another season, when perchance another Potato crop followed. He also suggested that tubers which were to form the sets of a future crop should be purified before being put into the soil by the application of some fungicide. The most effectual remedy yet applied for the disease itself seemed to be the Bordeaux mixture, or salts of copper in some form or other.

Dealing with "club root" or "fingers and toes" in Cabbages, Cauliflowers, Broccoli, and Turnips, he pointed out that it was difficult, in fact, almost impossible, to save plants in a clean state when once it got into the seed bed. Therefore, as soon as the pest was detected, the whole of the plants should be destroyed by fire, and a new plantation commenced upon a clean piece of land. Rotation of crops was an excellent way of preventing and getting rid of the disease. With regard to Tomato leaf blight and fruit rot, Mr. Hodder emphasised the great importance of cleanliness in culture and ventilation, and pointed out that if any fungicides of a poisonous nature were used it was absolutely necessary to be early. Affected fruit should be immediately picked and burned.

In his notes on rust in Chrysanthemums, Mr. Hodder dealt with the spots which now sometimes made their appearance on the under portions of leaves of the plant, described the various experiments he had made, and recommended the following as a remedy:—Boil 1 lb. of whale oil soap in half a gallon of water until dissolved, then add one gallon of best petroleum and keep on the boil for ten or fifteen minutes, stirring the whole time and obtaining a liquid about the consistency of gruel; then add of ammonia carbonate 2 or 3 ozs., and when cold place in jars for use as required in the proportion of one part of the emulsion to fifteen parts of water. The affected parts should be sprayed and resprayed every three or four weeks to flowering time. Fish manures should be avoided, but soot and clarified lime were suitable aids in repressing and preventing rust.

At the close of the paper there was an interesting discussion, and, on the motion of Mr. Slade, gardener at Poltimore House, who occupied the chair, Mr. Hodder was heartily thanked.—("Devon and Exeter Gazette.")

THE YOUNG GARDENERS' DOMAIN.

TOMATOES.

TOMATOES at present form one of the leading crops with the market grower, while in private gardens they are equally essential, so that a few notes on their culture will no doubt be beneficial to my fellow juniors. To obtain ripe fruit at the end of May or the beginning of June, the seeds should be sown forthwith, if the work has not already been done. Before sowing, place the compost in a house to become thoroughly warmed. It should consist of equal parts of good loam, leaf soil, and sand, well mixed. For sowing the seeds use 5 or 6-inch clean, well drained pots, filled to within half an inch from the top, and make the soil rather firm. Sow the seeds thinly, cover lightly, give a thorough watering, and place the pots on a shelf near the glass, allowing a temperature of 65°-70° night, 70°-75° day. When the plants are large enough to handle, pot them singly, and as deeply as possible in thumb pots. Apply water, and place the pots in a similar position to that the plants occupied as seedlings. When the roots reach the sides of the pots, the plants ought to be taken to a cooler house with a temperature of 55°-60° night, 60°-65° day.

As soon as they are well rooted, transfer them to clean, well drained, 6-inch pots, the compost consisting of two-thirds rough loam, and the remainder sweet horse droppings, with a little sand, and let the potting be both deep and firm. Place a neat stake to each, and give a thorough watering. Before the plants become root-bound, they should have their final shift. At this stage there are different methods of procedure, some growers utilising borders, while others grow them in pots, and the latter is perhaps preferable, for a better command can be had over the roots. For the final potting, clean, well-drained 12-inch pots are suitable, with a compost of two-thirds rough loam and a third of sweet horse droppings and old mortar rubble, with a slight sprinkling of Thomson's Vine manure and soot. Again let the potting be deep and firm, only filling the pots about one-half to permit future top-dressing. When the house has been thoroughly cleansed, the plants may be placed in their fruiting position, each having a stake for support until the trellis is reached. Keep the house at a temperature of 55°-60° night, 60°-65° day, with air, but avoid cold winds.

To insure a good crop, it will be found beneficial, when the plants are in bloom, to artificially aid fertilisation. When the first fruits are beginning to swell, a little weak liquid manure will be advantageous, and as time goes on and the plants gain vigour, it may be given rather stronger. Thomson's Vine manure mixed with clear water will be found a good stimulant to encourage the roots to the surface. Judgment must be used as regards top-dressing, but only add about an inch of soil at a time. Pinch out all laterals as they appear, and cut away portions of the foliage to let the fruit have the full benefit of the sun. Tomatoes are very subject to attacks from white fly, which can be eradicated with the XL All Vaporiser.—P. R.

THE FIG.

FEW of our choice dessert fruits are more eagerly sought after for home use than well-grown Figs, while for exhibition purposes they are also held in high esteem. It will be my aim to give a few notes from experience on the cultivation of this luscious fruit. Frequently a structure is set apart solely for their cultivation, and it should be light, with adequate means for ventilation and efficiently heated, so that in case of hard forcing the undue heating of the hot-water pipes would not be necessary. The border should be restricted, not too deep, but thoroughly drained. We get more fruitful trees when the roots are somewhat confined, and the Fig is very impatient of stagnancy, although, during the season of growth, abundant supplies of water will be required; indeed even in the resting season the border should not get so thoroughly dry as to be

injurious to the well-being of the tree, or the young fruit will drop badly. Cleanliness in all things must be rigidly observed.

Assuming the trees have naturally cast their leaves, pruning should be taken in hand, and experience is necessary in this operation, as thoughtlessness would soon ruin the fruiting properties of the tree. No more old wood ought to be taken out than will permit that left behind being laid in at an even distance of, say, 5 or 6 inches, more or less, according to the condition of the tree. After pruning, thoroughly wash all glass and woodwork, and, if necessary, dress the trees with Gishurst compound, a sharp look out being kept for scale, which, if left, soon multiply, and give the leaves in the summer an unsightly appearance, besides being injurious to the fruit. In training the trees, endeavour to get every branch and growth straight and evenly distributed. Look to the border after all training has been completed, taking off the surface soil down to the roots, and, if at all dry, afford a good watering of clear water, afterwards adding a rich root-enticing compost as a top-dressing. The Figs are then ready for starting, and, until such time as this comes, should be kept quite cool, merely excluding frost.

In many places early forcing of Figs is practised by the means of young trees in pots, these, if necessary, having been repotted on the fall of the leaf, not giving too great a shift. They ought to be started early in December if ripe fruits are required by the middle of the following April. Plunge the pots to the rim in sweet fermenting material, having a temperature of about 75°. The house should be started with a temperature of 45° to 50° by night, allowing 5° more during the daytime. Gradually raise the temperature as growth advances, judiciously watering with both clear water and liquid manure, the latter more especially as the fruit is swelling. Frequent syringings to keep insects at bay, thoughtful stopping at four or five leaves, thinning of weakly growths, and gradually hardening as ripening approaches, constitute the chief items in this direction. Care will be needed when the fruit has reached that stage when it appears stationary, as no hurrying must then take place, or disaster may ensue.—SEMPER.

(To be continued.)



FRUIT FORCING.

Cucumbers.—*Raising Plants in Frames.*—The material for making the seedling beds being in a fit condition for turning over and mixing with leaves, so as to induce a sweet regular heat, a site for the bed should be chosen with a full southern aspect, and having shelter to the north, as that of a wall. If the ground be rather higher where the bed is to be formed than the surrounding level, all the better. Mix, and beat the materials well down with the fork as the work proceeds, making the bed about 5 feet high at the back and 4 feet 6 inches in front, which will allow for settling, as it will do about one-third. A few Pea sticks placed across and along the bed at intervals not only prevents overheating, but admits of the heat from linings being conveyed to the interior of the bed. For early work frames with an inner lining are an advantage. They are formed by placing quarter-inch boards 11 inches in depth at the back and 9 inches in front, with the bottom edges level with the bottom of the box, nailing strips of wood an inch wide and thick on the inside of the frame, and then the boards, which form a cavity all around the inside of the box, and thus top heat is furnished. In a week, after making up the bed and putting on the frame and light, level the surface of the bed, replace the box, and place in sufficient sweetened fermenting material to raise the inside to within 4 inches of the inner casing, placing partially decayed, rather dry leaves, or sifted spent tan on the manure, and bringing up level with the casing, which will allow of the pots being plunged about 3 inches.

To raise the plants, 3-inch pots are half filled with light rich loam, placing one seed in the centre of each pot, covering about half an inch with fine moist soil, so that no water is needed until after germination. Space is thus left in the pot for top-dressing, which is preferable to moving the plants. A square of glass placed over each pot will hasten the germination, but it must be removed as soon as the plants appear. The plants from a sowing made early in February will be ready for planting early in March, and will afford fruit at the end of April or early in May.

Vines.—*Early Forced in Pots.*—Although it is desirable to thin the berries somewhat freely, it is essential that enough be left to form compact bunches. Maintain the temperature at 65° at night, falling to 60° on cold mornings, 65° to 70° by day, admitting a little air at 75°, increasing the temperature with sun heat to 80° or 85°, closing the house at 80° with a prospect of an advance to 85° or 90°, at the same time damping the house. Sprinkle the paths and walls in the morning and evening when sharp firing is had recourse to, but avoid causing a steam. Great care is necessary in ventilating, admitting a little air at a time so as not to reduce the temperature, but to prevent its rising suddenly to an unsafe point. Afford copious supplies of liquid manure a few degrees warmer than the mean temperature of the house.

Early Forced Planted-out Vines.—Remove all duplicate bunches, thinning the berries immediately they are well formed. Give attention to stopping bud laterals and tying bud shoots. It is assumed that the bearing growths have been stopped two or three joints beyond the fruit. Where the space is restricted they may be pinched to one joint above the bunch. In any case the axillary growths can be stopped at the first joint, and to one leaf afterwards as fresh growth is made. If this is likely to interfere with the principal leaves the laterals must be rubbed off except from the two lowest leaves, those on a level with and above the fruit being stopped to one joint. The principal foliage should be fully exposed to light and air, overcrowding being highly prejudicial. Very close stopping, however, is not to be recommended where there is room for extension, as the increase of foliage promotes root action, therefore preserve all foliage consistent with its full exposure to light. If there are no fermenting materials or evaporation troughs in the house the floors and borders may be sprinkled with diluted stable drainings. Where the soil is of a very porous nature, or the borders of limited area, the whole of the surface of inside borders may be covered with sweetened horse droppings, then the water applied passing through the light mulching will excite root action, and with the leaves in good condition the berries swell freely.

Houses in which the Vines are in bloom should be maintained steadily at 65° at night, 70° to 75° by day, and 5° to 10° more from sun heat, with 5° more all round for Muscats. Black Muscat (Hamburgh) and even Madresfield Court, also Muscat of Alexandria and other varieties liable to set indifferently, may be assisted by tapping the bunches every day, or more certainly by applying ripe pollen, drawing a brush lightly over the bunches. A constant circulation of dry warm air is conducive to a good set, and it is advisable not to stop the growth closely during the setting period. If any varieties are deficient of pollen it may be taken from those affording it freely, such as Black Hamburgh, collecting it on a sheet of paper, and then loading a brush with it, pass it over the bunches of the shy setter.

Vines Started at the New Year.—Continue to syringe the rods twice a day until the bunches are formed, when it is best discontinued, but maintaining plenty of atmospheric moisture by damping the paths and borders two or three times a day. Increase the temperature to 55° at night, and from that gradually to 60° after the buds start, 60° to 65° by day, with an advance from sun heat to 75° and ventilation in accordance with the state of the external air. It is desirable to keep up a supply of ammonia in all houses by turning over any fermenting material, sprinkling sweetened horse droppings on the border, damping with liquid manure or having the evaporation troughs kept filled with the same.

Houses to Afford Ripe Grapes in July.—Start the Vines at the beginning of February. There is no need to cover the outside border with more protective material, such as leaves or litter; these suffice to prevent the soil being frozen. If the Vines are planted outside, see that the stems are well protected by haybands, for if these become frozen after the Vines have started into growth, it is certain they will receive a severe check and the crop be lost. Syringe the rods two or three times a day, maintaining a temperature of 50° at night and 65° by day with sun heat. Supply inside borders with water or liquid manure, but only to bring the soil into a moist condition, taking care not to make it sodden and sour.

THE KITCHEN GARDEN.

Early Celery.—If Celery is wanted very early seeds should be sown at once, giving the preference to a good white variety. The seeds should be sown on the surface of pans of fine soil made level and moistened. Cover very lightly, if at all, with fine soil, place on a mild hotbed or in a moist, brisk heat, cover with a square of glass, shade heavily, and be careful not to disturb the seed by careless watering. When large enough prick them in boxes of light loamy soil, and still keep them in a light position and gentle heat. Subsequently they may be grown in frames or in 6-inch pots.

Onions.—If extra fine Onions are required for competition at shows, the plants to produce them should be raised under glass and duly planted out. This plan is also the best to follow by all who have hitherto experienced any difficulty in obtaining heavy crops of sound, good keeping bulbs. When raised in gentle heat not a seed or a plant is wasted, an early start is insured, and a perfect maturation of bulbs inevitable. If the seed is sown somewhat thinly in boxes of light loamy soil the plants may eventually be moved from the boxes to where they are to be grown to their full size, but if raised thickly they ought to be pricked into other boxes and kept in these for a time. Press the seed into the soil, cover with a little fine soil, and place in a moderately warm house, pit, or frame to germinate.

Early Leeks.—For ordinary purposes the plants may well be raised in the open ground, sowing the seed late in February or early in March, but if fine Leeks are wanted comparatively early sow the seed and treat the plants throughout similarly to Celery.

Carrots and Radishes.—For these a gentle, lasting heat is required, and the hotbeds may be formed either in pits or in a sheltered open position somewhat larger than the frames to be stood on them. About 6 inches of light sandy soil, such as may be obtained by sifting over a heap of old potting soil, is enough for the surface. Sow the seed, directly all danger from overheating of the hotbed is past, in shallow drills. If Carrots and Radishes are grown together, as they may well be, the former should be sown in drills 8 inches apart, and midway between these a row of Radishes. In any case, thin sowing to obviate the necessity for thinning, should be practised, covering the seed with a little fine soil. The Radishes will be ready for use and drawn long before the whole of the space is required by the Carrots.

Early Potatoes.—Where the planting tubers were stored in heaps the mild winter has caused them to sprout early, and the shoots are too long to save. Weather permitting, all should be cleared of their long shoots and be spread out thinly in shallow boxes, and placed in a cool, light position to start afresh. By planting time all ought to be furnished with two or three short thick sprouts, and as far as the round and pebble shaped varieties are concerned, will not have been greatly weakened. It is the Ash-leaf varieties that suffer the most from the loss of the primary sprouts. These ought to be kept thinly stored, and in a light position from the first. Any tubers that are to be forced in pots, pits, or frames, ought first to be started in boxes, arranged sprout end uppermost, a moist atmosphere and gentle heat causing a healthy, strong growth. In the meantime prepare mild hotbeds and soil, and by the time the latter is well warmed through and the strong heat declined somewhat, the sprouts will have commenced forming roots and be in excellent condition for planting.

THE BEE-KEEPER.

WORK IN THE APIARY.

DURING the long winter evenings much work may be done in the apiary which will be beneficial to the bees when the busy time comes. More often than otherwise we fear very little preparation is made by bee-keepers beforehand, or there would not be so many complaints from them during the busy season of their inability to procure from dealers in bee appliances the goods they require. It is unreasonable for them to expect their orders to be satisfactorily carried out when a short notice is given. If a little forethought were given to this matter it would be to the advantage of both buyer and seller.

Early in the new year it is our practice to carefully examine all the utensils we use in connection with bee-keeping and make a note of our requirements, and whilst the various articles are passed through our hands they are cleaned if necessary, and placed where they may be easily found when required for future use. In well managed apiaries a correct list will be kept of all sections and bottles on hand. It is useless waiting until they are required, and then expect the dealer to supply them at a moment's notice. The honey season is usually so short in this country that a delay of a few days in obtaining the necessary articles may make all the difference between the success or failure of the honey crop.

Another advantage bee-keepers derive by obtaining their goods at this season is—the majority of dealers will allow a liberal discount on all goods supplied before spring. We, therefore, cannot too strongly impress on bee-keepers the great benefit it will be to them to make their arrangements beforehand. Combs, whether in frames or sections, should at the same time be removed from the boxes or wherever they are stored, and examined to see if the wax moth has molested them, as if left undisturbed the combs would soon be ruined. If previous instructions have been carried out, and carbolic acid is again sprinkled on the wrappers in which they were enclosed, little damage will be done. They may then be placed in the same position they previously occupied.

SPARE HIVES AND FRAMES.

It does not require a tradesman to make either frames or hives, and anyone who felt inclined to try their hand at this interesting work might do so most successfully during the winter evenings. We would advise those who have not previously attempted, to procure a hive that has been properly made, and there need then be no difficulty in making another equally good out of a box that can be obtained from grocers and others for a few coppers.

Whether bee-keepers obtain their goods ready made or they manufacture their own, it is advisable to have them all of the same dimensions, as they are so much easier to manipulate, and if extracted honey is the chief aim of the bee-keeper, it is sometimes a decided advantage to be able to practise the doubling system, and it is a very simple operation when all the hives are of the same dimensions and each one has a loose floor board.

Frames ready made may now be obtained at such a low price that many bee-keepers prefer to buy them. There is one strong point in favour of the frames turned out by our large manufacturers is they are made true to measurement, and hang square in the hive. They are, however, often lightly made, and on several occasions we have seen the top bar break whilst lifting a fully sealed comb out of the hive. We therefore prefer the home-made frames if ordinary care is taken in making them. A block is necessary for this purpose; it is then impossible to make one larger than another; a little practice, however, is required to make them so that they hang perfectly square in the hive, otherwise some frames will touch each other, and others may be a couple of inches apart.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Fruit and Flower Farming (H. W.).—We have no justification for publishing the addresses you suggest, and thus causing busy people to be inundated with letters, even though the recipients did not, as certainly many of them would not, reply to the applications. If you cannot obtain what you require otherwise, you might try the effect of advertising in the usual business way in which persons make known their "wants."

Begonia Gloire de Lorraine (W. C. S.).—This is one of the very best plants now grown for winter flowering. After blooming the plants should be kept a little cooler than before and rather dry at the roots for three or four weeks. Then place them in heat and repot as soon as they begin to grow freely, using a compost of two parts loam, one part of peat or leaf soil, with sharp sand added. Pot very firmly. As soon as good young cuttings are formed they should be inserted in sandy soil and kept close in a hand-light placed in a warm house. Pot as required, and grow in a temperature of 60° during the spring months. Throughout the summer the plants succeed well in a cool house or frame. Stopping the young growths should be practised three or four times during the summer. The plants will then form dense bushy little specimens. During the flowering period provide a temperature ranging between 55° and 65°.

Soil for Rhododendrons (Rhodo).—The best mixture, next to peat, for these shrubs is the turfy surface of a pasture where the soil is of a sandy or gravelly nature, cut about 2 inches thick, chopping and adding one-fourth of well-decayed cow manure. In preparing the beds the subsoil should be sufficiently porous or drained to prevent water becoming stagnant beneath and around the plants. As your soil has a clay subsoil it will not do to make beds a depth of 3 feet without having drains from them, and somewhat lower, with proper fall and outlet, or you would only have pits for holding water. Besides, a depth of 2 feet, or at most 2½ feet, is quite deep enough for Rhododendrons, and we should only have the latter in your case, with 6 inches of rubble (preferably freestone, certainly not calcareous material) placed in, not forgetting the drains to carry off superfluous water, and on the rubble place a layer of turves grass side downwards. This will give the plants a chance. They do not object to a clay subsoil if it be well drained. If peat is procurable it should form the bulk; leaf soil and sandy loam may be added more freely when they can be readily obtained, and dried cow manure is an excellent addition. Here is a good mixture:—Peat two parts, leaf soil and sandy loam one part each, dried cow manure one part. The object in this mixture is to save the peat, mixing all well together. Another good mixture is:—Half-decayed leaves three parts; turfy surface of a pasture, cut about 3 inches thick, one part; rough white or other sharp sand half a part; chop but not beat the soil, and use it as rough as possible. If the plants have 6 inches depth of this below the balls, and it is brought up around them and over so as to cover them about an inch, they will thrive, giving a top-dressing every two years of cow manure. Yet another recipe may be given:—Half-decayed stable manure, from horses bedded with sawdust, one part; turfy loam, of a sandy or gravelly nature, two parts—the loam chopped up and mixed well with the sawdust material. The best Rhododendrons we have grown were planted in light turfy loam over good drainage, the beds being kept well mulched with the half-decayed sawdust and manure, loose box material, about a sixth of sharp sand being added to it and intermixed. Now choose for yourself, it being a question of making worthy use of available material.

Calanthes (Foreman).—The spikes are most creditable, and it is plainly apparent that your methods of cultivation are excellent. The names you give are correct. The Poinsettias are very fine.

The Vegetable Pear (N. B.).—By this we presume you refer to Vegetable Marrow. If so, the seed should not be sown until the end of April or early in May under a wall for shelter, and they should be placed about 6 feet apart, it being usual to sow three seeds in a place to make sure of a sturdy plant, leaving the strongest one when they are showing the second rough leaf. The plants do not transplant well, it being usual to raise them in pots so as to overcome the difficulty and get them forward for planting out.

Pruning a Shrub (H. F.).—The shrub, apparently *Pyrus Maulei*, should be pruned in the summer—that is, have the growth regulated and laid in so as to cover the space evenly, any foreright growths being shortened to a few leaves. When this has been neglected the pruning should be attended to now, cutting away any excessive growths so as to keep near the wall, as it flowers on the well-ripened wood. It is usual to go over the shrub about July, regulating the growths by cutting back the shoots not required for filling space, and again in the autumn or spring, in order to keep it within bounds.

Vallota purpurea—Narcissi Bulbs (Idem).—This plant usually flowers in the late summer or early autumn, but not in the spring. The plants should be kept supplied with water after flowering, and grown in plenty of light in a cool house kept safe from frost. As the plants are looking healthy they will probably flower in the summer. Towards the end of May or early in June the plants may be placed outside, assigning them a sunny position, and duly supplying with water. If necessary they can be potted now, but it is advisable not to disturb the plants much, and to keep somewhat under rather than over-potted. They are perhaps best potted and planted in June and July, when they commence root action, before the flower stems are sent up; but we have potted them with success just after flowering. They should not be dried off, but have the soil moist at all times of year. 2, Narcissus bulbs will flower a second season, but not so well as the first, as they suffer more or less from the forcing process. They should be kept in a light situation safe from frost, so as to complete and mature the growths, then, when they die down, they may be kept drier at the roots or dried off, though they are best left in the pots, and these stood on a moist base. They should be potted in August or September, giving them fresh soil to grow in.

Oil Stove—Hot-water Apparatus (R. D.).—The "smell" of an oil stove is more or less injurious to vegetation, and even the "new blue-flame stoves" must do some harm, as they give off the heat at a high temperature. We have no experience of the "twelve-hours stove," but if one heating water and not giving out any fumes, it may be a suitable apparatus. We consider "the Loughborough boiler," advertised in our columns excellent for heating a small greenhouse, and it will burn either coal or coke. Being fixed outside no fumes can enter the house and cause harm to the plants.

Boarded Fences for Peaches (Scot, N.B.).—We have no experience so far north as Dundee of Peach trees on boarded fences, and hardly think them likely to succeed. Boarded fences only afford shelter from certain points, and concentrate the sun's warmth when present, not absorbing much heat and giving it out again as in the case of a wall. You must exercise judgment in the matter, as we find Peaches do not succeed against wooden fences with a south aspect in the north of England at over 100 feet above sea level. There are, of course, very sheltered and sunny situations—veritable sun traps—where "very fair Peaches have grown" under the conditions you propose, but they must be exceptional in location. 1, We consider single oblique cordon trees would be the most suitable, and the border for them need not exceed one-half the height of the wall in width, nor should it be less than one-third. 2, For dwarf trained trees, which we do not advise for your purpose, the border should be about two-thirds in width that of the height of the fence, and the trees placed twice as far apart when the height does not exceed 7 feet 6 inches. 3, The lowest satisfactory height for the fences is 6 feet, the usual height of boundary boardings. 4, The best plan of nailing on the boards is the upright. When placed horizontally the wet lodges in the joints between the boards, and they decay accordingly. Why not place the boards upright to within a foot or board-width of the ground and there place a stout board horizontally?

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. C. S.).—*Begonia Gloire de Lorraine*, see page 74. (W. S. J.).—1, *Cypripedium insigne*, good variety; 2, *Lælia anceps*; 3, *Adiantum cuneatum grandiceps*; 4, *Selaginella cæsia*. (O. S. P.).—1, *Cupressus funebris*; 2, *Thuja Lobbi*; 3, *Taxodium distichum*; 4, *Cedrus deodara*; 5, *Retinospora plumosa aurea*.

TRADE CATALOGUES RECEIVED.

S. Bide, Alma Nurseries, Farnham.—Seeds.

G. Cooling & Sons, Northgate, Bath.—Seeds.

B. R. Davis, Yeovil.—*Begonias and Seeds*.

Davy, Beaufort-en-Vallée (Marne and Loire), France.—Seeds.

H. P. Kelsey, Boston, Mass.—*American Plants and Flowers*.

R. Sydenham, Tenby Street, Birmingham.—Seeds.

COVENT GARDEN MARKET.—JAN. 25TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3 6	Lemons, case ...	30	0 to 60 0
Cobs ...	40	0 45 0	St. Michael's Pines, each	2	6 5 0
Grapes, lb. ...	0	10 1 6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0 0	Mustard and Cress, punnet	0	2 to 0 4
Beans, $\frac{1}{2}$ sieve ...	0	0 0 0	Onions, bushel ...	3	6 4 0
Beet, Red, doz. ...	1	0 0 0	Parsley, doz. bnchs. ...	2	0 3 0
Carrots, bunch ...	0	3 0 4	Parsnips, doz. ...	1	0 0 0
Cauliflowers, doz. ...	2	0 3 0	Potatoes, cwt. ...	2	0 4 0
Celery, bundle ...	1	0 0 0	Salsafy, bundle ...	1	0 0 0
Coleworts, doz. bnchs. ...	2	0 4 0	Scorzonera, bundle ...	1	6 0 0
Cucumbers ...	0	4 0 8	Seakale, basket ...	1	6 1 0
Endive, doz. ...	1	3 1 6	Shallots, lb. ...	0	3 0 0
Herbs, bunch ...	0	3 0 0	Spinach, pad ...	0	0 0 0
Leeks, bunch ...	0	2 0 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 1 9
Lettuce, doz. ...	1	3 0 0	Tomatoes, lb. ...	0	4 0 9
Mushrooms, lb. ...	0	6 0 8	Turnips, bunch ...	0	3 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36 0	Ficus elastica, each ...	1	0 to 7 0
Aspidistra, doz. ...	18	0 36 0	Foliage plants, var., each	1	0 5 0
Aspidistra, specimen ...	5	0 10 6	Lilium Harrisii, doz. ...	24	0 36 0
Crotons, doz. ...	18	0 24 0	Lycopodiums, doz. ...	3	0 4 0
Dracæna, var., doz. ...	12	0 30 0	Marguerite Daisy, doz. ...	9	0 12 0
Dracæna viridis, doz. ...	9	0 18 0	Myrtles, doz. ...	6	0 9 0
Erica various, doz. ...	9	0 24 0	Palms, in var., each ...	1	0 15 0
Euonymus, var., doz. ...	6	0 18 0	" specimens ...	21	0 63 0
Evergreens, var., doz. ...	4	0 18 0	Pelargoniums, scarlet, doz. ...	8	0 12 0
Ferns, var., doz. ...	4	0 18 0	Solanums, doz. ...	6	0 12 0
" small, 100 ...	4	0 8 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	6	0 to 8 0	Lilac, bunch ...	3	6 to 5 0
Asparagus, Fern, bunch ...	2	0 2 6	Lily of the Valley, 12 sprays	0	6 1 3
Azalea, white, per doz. bnchs. ...	3	0 4 0	Marguerites, doz. bnchs. ...	4	0 5 0
Bouvardias, bunch ...	0	4 0 6	Maidenhair Fern, doz. bnchs. ...	6	0 8 0
Carnations, 12 blooms ...	1	6 2 0	Narcissus, doz. bnchs. ...	1	0 2 0
Chrysanthemums, per bch. specimen	0	6 2 0	Orchids, var., doz. blooms	1	6 9 0
" blooms, per doz. ...	1	6 to 2 0	Pelargoniums, doz. bnchs. ...	6	0 10 0
Daffodils, single yellow, bch. 12 blooms ...	1	0 0 0	Poinsettias, doz. blooms ...	4	0 6 0
Eucharis, doz. ...	2	0 3 0	Roses (indoor), doz. ...	2	0 3 0
Freesia, doz. bnchs. ...	2	0 4 0	" Red, doz. ...	6	0 8 0
Gardenias, doz. ...	2	0 3 0	" Tea, white, doz. ...	3	0 4 0
Geranium, scarlet, doz. bnchs. ...	6	0 8 0	" Yellow, doz. (Perles) ...	2	0 3 0
Hyacinths, Roman, bunch ...	0	6 0 8	" Safrano, doz. ...	1	0 1 6
Lilium lancifolium, white ...	3	0 4 0	" Pink, doz. ...	0	0 0 0
" longiflorum, 12 blooms	8	0 10 0	Smilax, bunch ...	2	6 3 0
			Tulips, bunch ...	1	0 1 6
			Violets ...	1	0 2 6
			" Parme, bunch ...	2	6 3 0



A FULL MILK PAIL.

It is no figure of speech to say we are greatly under obligations to our readers for the questions they at times ask us, as they serve to show the subjects most appreciated, and most calculated to be of use.

We have said it before, and we say it again, if people would only mention little difficulties, we are always willing (where possible) to help in their solution. We prefer, if our applicant can wait, to make his difficulty the subject of a paper, as we can then discuss the subject at greater length, and possibly make our answer more comprehensive.

Among all gentlemen and ladies of property living in the country, or suburbs of our towns, the first thing that occurs to them after the establishment of a garden, is the building of a cowhouse and the maintenance of a cow. They seem to consider there is a great charm

in home-produced milk, and they like to have some live stock in which they can take a real interest. Should there be a small run of grass, there is no prettier object than a Jersey or Alderney at feed during the summer months, and a little calf adds much to the interest.

But these pretty pets are not supposed to be idle, and much questioning and doubt often arises in the breast of the owner as to whether or no there should not be a fuller milkpail. The best of the Channel Islanders have not immense bags, and unless great care is taken in the feeding and management that small quantity may be made considerably less. It is not the food altogether, though that is sometimes blamed; there are other causes at work, and it only takes a small thing to put a cow out of milking gear. Cow-keeping (to have a perennial supply of milk) necessitates at least two cows, and matters must be so arranged that they do not both calve at once. A cow is not an ever-flowing fountain of milk. She must have her periods of rest, although it is quite wonderful how long she will continue, with judicious food, to give milk.

Then, again, should the breed be Channel Islanders one cow will hardly suffice for an ordinary family supply. Of course the milk is rich and good; but pints cannot be turned into quarts even by conjurers. A cow too young or too old may easily be palmed off on the unwary buyer; it is always well to employ an expert to do the buying. As to the calves—well, there is usually no milk left for them, and unless they are heifers their only end is the butcher, who may give 5s., but probably will bid 2s. 6d. for the dappled darlings.

A cowman, like a poet, is born, not made, and looking after cows, to make them do any good, is not so easy a job as it appears to the casual observer. Many and many a cow is lost from milk fever simply because the feeding beforehand has been too forcing; and many a cow has been utterly ruined by bad milking. We do not like men milkers ourselves; they are apt to be too quick and careless. It is absolutely necessary that a cow at each milking time should be most carefully striped or stropped—that is every drop of milk must be extracted; no half measures here. The richest milk is always the last, hence thorough milking cuts two ways; the cow is properly relieved, and the owner gets his full share of cream.

As the use of roots in feeding is much restricted if not altogether forbidden, the bulk of the food is of a very dry nature—that is unless it is treated to steaming or mashing. Hay, cake, and meal contain little or no natural moisture, and therefore it must be seen that moisture in large quantities be provided.

An ample supply of sweet pure water should be within reach of every cow; possibly this cannot be quite managed without much alteration in the present buildings. In that case it must be the first of the cowman's duties to see the cows have the water carried to them at least four times a day, and this water must not be served "*au naturel*," but brought up to blood heat. It is the poor man's cow which generally does the best, for the wife sees that it has properly heated drinks of various kinds.

We all know how much better we feel after a warm meal, and a cow always responds to good comfortable treatment. Some cows are turned out for a few hours daily in the winter months if not too severe. This is a plan we do not recommend unless there be a covered yard where they may exercise free from draughts. Exercise certainly does them good, but a chill is a sad impediment to a good milk flow. We believe if roots were given directly after milking, with all green parts cut off, the milk would not suffer in taste, and the cow would be benefited by a change in diet. There might be a difficulty sometimes about getting a few Mangolds, yet there are usually plenty of small farms where a load or two can be procured.

A cow tied up during a long cold winter requires change of diet to keep her milk supply even and regular. All sorts of meal, almost, may be used to make warm broths or gruels, and a pailful before the afternoon's milking has a very desirable effect. These meals must be regulated by the market price, sometimes one sort, sometimes another, being cheap and abundant. A few Carrots, too, make a pleasing variety, and are nowadays easily procurable.

For the use of amateurs we copy out some dietary tables found in a book on Jersey management by Vinton & Co.:—

EXAMPLE I.			
Carrots	12 lbs.		
Chaff, Oat straw	5 lbs.		
Chaff, good hay	5 lbs.		
Decorticated cotton cake	2 lbs.		
Crushed Oats	2 lbs.		
Good hay	7 lbs.		

EXAMPLE II.			
Inner leaf Drumhead Cab-			
bage	18 lbs.		
Chaff like No. 1	10 lbs.		
Linseed cake	2 lbs.		
Crushed Oats	2 lbs.		
Bran... ..	2 lbs.		
Good meadow hay	7 lbs.		

EXAMPLE III.			
Mangolds	14 lbs.		
Chaff as above	10 lbs.		
Decorticated cotton cake	3 lbs.		
Maize meal	3 lbs.		
Good hay	7 lbs.		

EXAMPLE IV.			
Mangolds	14 lbs.		
Chaff	10 lbs.		
Decorticated cotton cake	2 lbs.		
Maize meal	2 lbs.		
Malt, sprouted	2 lbs.		
Good hay	7 lbs.		

These four examples at any rate give variety, and are very fairly balanced—i.e., no class of food unduly predominates above another. There are tissues to build up, the life of the unborn calf to provide for, and an ever-gaping milkpail to be filled twice a day with milk rich in fat.

WORK ON THE HOME FARM.

Ploughing is all done, and as we do not believe in cross-cutting until February we must perforce turn our attention to the yards, which are now so full of muck that it is difficult to keep the cattle out of the cribs. So we must, or rather the horses must, try and struggle with heavy loads over heavy roads and heavier land to convey the muck to the hill, or for spreading direct.

Where land is clean enough, were it not that the heavy carting over it and consequent treading would make it very solid and the horse labour would be so severe, it might be worth while to consider whether muck for Turnips would not be better spread on the land now. Cross-cutting might soon follow, burying or partially burying the manure; and although there might be a slight loss of free ammonia, we fancy that the potash and phosphate in the manure having time to become more soluble (shall we say available) would more than balance any such loss. This much is certain, that on soils where a Turnip plant is a difficult object to attain, manure, if used at all, should be ploughed in during the winter if possible.

Turnips, with the help of the mild weather, are holding out better than was expected, but are now showing strong signs of running to seed. Swedes in such a case might yet be taken up and stored with advantage, for with every inch of new growth the feeding value of the roots will be enormously reduced, whilst if a severe spell were yet in store for us the loss would be quite as great from frost as from running to seed.

The season is very favourable for making further sowings of Wheat. Will farmers, however, consider 27s. per quarter sufficiently encouraging to make further sowings? We think not, and except on very dry soil should advise the growth of Barley or Oats as being more likely to be profitable.

METEOROLOGICAL OBSERVATIONS.

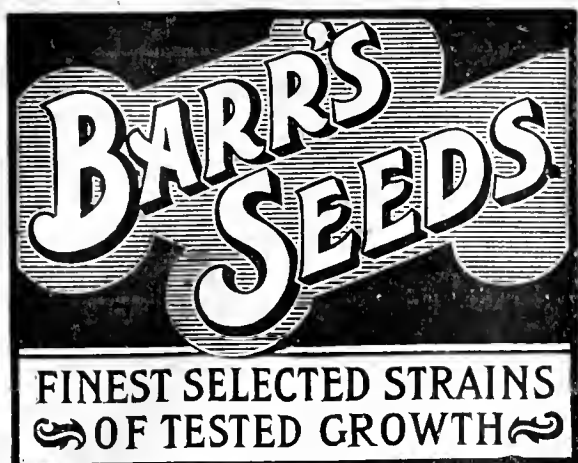
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1899. January.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday 15	29.931	43.4	41.9	S. W.	41.0	53.9	35.0	54.0	28.8	0.458.
Monday 16	29.498	49.4	47.4	S. W.	43.1	51.2	43.4	70.3	40.9	0.038
Tuesday 17	29.987	33.8	31.2	W.	42.9	48.9	32.9	61.6	27.9	0.134
Wednesday .. 18	29.848	48.9	47.2	W.	41.7	52.7	34.2	57.7	29.9	—
Thursday .. 19	29.625	51.9	49.3	S. W.	43.4	53.4	48.6	57.2	44.3	0.027
Friday 20	29.768	46.8	44.6	S. W.	44.0	53.2	43.8	59.1	36.9	0.229
Saturday 21	29.503	53.2	51.3	S. W.	45.0	56.2	46.3	63.0	43.7	0.048
	29.737	46.8	44.7		43.0	52.8	40.7	60.4	36.1	0.934

REMARKS.

- 15th.—Fine early; incessant rain from 9.30 A.M. to 2 P.M.; dull and damp after.
 16th.—Mild day, overcast early; showery from 9.30 to 10.30 A.M., at 1 P.M., 4.10 P.M., and 5.20 P.M.; bright sun from 10.50 A.M. to noon and 1.25 P.M. to 4 P.M.; bright night.
 17th.—Bright and fresh from early morning to sunset; rain from 7.30 P.M.
 18th.—Rain till 3 A.M., mild and humid after; fair day, and spots of rain at night.
 19th.—Overcast, with spots of rain or drizzle at intervals, and slight showers in afternoon.
 20th.—Fair early; faint sun at times in morning; almost continuous rain or drizzle from noon; S.W. gale at night.
 21st.—S.W. gale with rain or drizzle early, and in evening; overcast day, but gleams of sun about noon.
 Mild; wet to stormy.—G. J. SYMONS.



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CONTAINS—

- | | |
|---|---------------------------|
| 16 Pints Peas (including Al, Marrowfat, and Late Queen) | 2 Pkts. Endive |
| 6 Pints Broad Beans | 1 " Gourds |
| 2 Pints Dwarf French Beans | 1 " Kohl Rabi |
| 1 Pint Scarlet Runner | 1 " Leek |
| 1 Packet Asparagus | 3 " Cabbage Lettuce |
| 2 Pkts. Beet | 2 " Cos Lettuce |
| 2 " Borecole | 2 " Melon |
| 3 " Broccoli | 6 ozs. Mustard |
| 2 " Brussels Sprouts | 4 " Onion |
| 3 " Cabbage | 2 Pkts. Parsley |
| 1 " Capsicum | 2 ozs. Parsnip |
| 4 ozs. Carrot | 4 " Radish |
| 2 Pkts. Cauliflower | 1 Packet Salsify |
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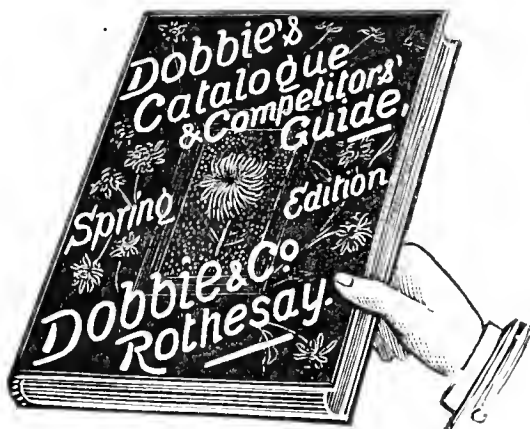
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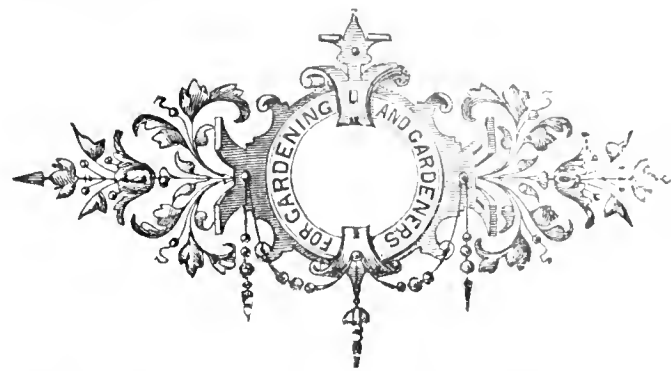
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Journal of Horticulture.

THURSDAY, FEBRUARY 2, 1899.

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RAISING AND GROWING MELONS.

PROBABLY no fruit is more generally mismanaged than Melons. Of course I am fully aware that there are exceptions, and that many handsome crops are produced by growers who thoroughly understand the details of culture requisite to attain success. Those persons who attend summer exhibitions are well aware of the number of inferior Melons met with as far as flavour is concerned. From a dozen fruit of both green and scarlet seldom can more than three of really fine flavour be found. When this happens during the months of July, August, and September, it is safe to suggest that the cultural conditions under which all were produced could not have been of the best.

The awarding of prizes to Melons solely by their appearance, with perhaps the sense of smell thrown in, has been advocated, but it, in my opinion, would be a grave error. Melons with a rough skin are frequently the most luscious, and *vice versa*. As a rule scarlet flesh varieties are inferior in flavour to those with green flesh, and very seldom are white flesh Melons first prize winners. Scarlet Gem held its own as the finest flavoured Melon in that section for at least twenty years, and never was there a more rugged, rough looking fruit. This variety has perhaps taken more prizes than any other, not even excepting Hero of Lockinge, which has been a standard variety in the green flesh section for a number of years.

In justice to many gardeners, however, it must be said that the convenience for Melon culture is not nearly so good in some gardens as it should be, and growers who are handicapped by ill-adapted structures have some excuse if inferior samples are produced. A properly heated low-roofed house is undoubtedly the best, and span-roofed structures, about 10 feet to 12 feet wide, are perhaps better than an ordinary lean-to house, because more space is provided for a greater variety, and two crops can be accommodated at the same time, while light and air are at command in greater amounts if required.

Where only one house can be used for Melons

No. 2627.—VOL. C., OLD SERIES.

it is wise to grow several varieties, as the season of ripe fruit is thus prolonged, even under the same treatment. Obviously, when these conditions prevail, greater care is necessary in fertilising the flowers if seeds are to be saved. In a case where seed sowing is the primary consideration, one variety in a house is the correct method to pursue.

Heated pits are often requisitioned for Melons, and even in frames, with no artificial heat beyond a small quantity of manure to give the plants a start, many good crops have been produced. Under such circumstances, more attention to the details of air giving and pinching the shoots is necessary, and if the weather is uncongenial—partially dry and warm—during the months of July and August, Melon growing in frames is a long way from being a pleasurable undertaking.

Plants growing in frames admit of little variety in the form of growth, as all must be, what might not inaptly be termed, bushes. In a house various methods of training are adopted, but the cordon system is the best. Plants 15 inches apart give a crop more quickly throughout the house, because if one plant does not give the requisite number, there is no appreciable difference in the whole. Two or three fruits are soon "set," which swell rapidly, and thus afford time for a successional crop, either from the same or later raised plants. Many cultivators aim to have two crops from the same plants. Another method is to have the plants 4 feet apart, and train the shoots to the right and left, but much time is then required to furnish the roof, and a longer period is occupied in obtaining the necessary number of fruit.

The present is a suitable time to sow seeds to have ripe fruit in May, and only too often is failure clearly traceable to a bad stock at the outset. The plants in separate pots must be sturdy, and have the first leaf close to the seed leaves, and not, as is frequently the case, attenuated, for such plants never thrive satisfactorily. They are the result of thick sowing and lack of after attention in various ways. Let the seeds be sown singly in 2½-inch pots, containing fresh loam, and covering with half an inch of moist soil. Gentle bottom heat favours rapid vegetation, and immediately the seedlings are through the soil place the pots on a shelf close to the glass in a temperature of not less than 65°. In such a position they grow sturdily, and must be transferred to larger pots when a good number of roots have formed.

Some growers employ loam only for planting, considering the use of manure in any form to be harmful, and this, in my opinion, is one of the chief causes of failure. For years I upheld the same view, but a change of procedure, in which manure was an important agent, brought results far more satisfactory than anything I attained to before. It is obviously impossible for plants growing slowly in poor soil to give as luscious fruits as those in a better medium will do. An improvement in the quantity and quality of the foliage must have a beneficial effect on the fruit. Half-decayed cow manure and loam, in the proportion of three parts of the latter to one of the former, make the best compost, which can scarcely be too firm at planting time for Melons. When the roots appear on the surface is the time to add an inch or so of cow manure and loam in equal parts, and the increase in size and colour of the foliage will be an early indication that the plants enjoy the food.

In planting, a rather high ridge is formed along the centre of the bed, and the collar is kept well above the soil as a preventive of canker, which then, with care in watering, ought not to trouble anyone. Low planting, so that the stem above the seed leaves is partly buried, or so placed that it is continually moist, is productive of canker, and diseased plants are difficult to cure. Powdered charcoal, lime, and sulphur, are suggested, but prevention is my watchword with this as well as other foes. Cordon-trained plants should not have the points removed until they have reached the limit of space. Pinch out the point of all side shoots one joint beyond the fruit, and avoid overcrowding the foliage; it is better to remove a fruitless shoot than hinder maturation and encourage weak growth.

Abundance of moisture both at the roots and in the atmosphere

is absolutely necessary after the fruit is set and swelling; the former to assist growth, and the latter to ward off insect pests, such as red spider, thrips, and mealy bug, all of which are prejudicial to success. Directly the first sign of ripening is visible some persons withhold water from the roots and the leaves, and the latter is correct, as when moist the fruit is more liable to crack, but the foliage ought to be maintained in active condition up to the time of ripening, and to insure this the soil at the roots must never become quite dry. Abundance of air must be admitted as the fruit ripens, and a buoyant atmosphere maintained, damp air being positively injurious.

An article of this nature should contain some reference to varieties, which are at the present time so numerous as to bewilder the inexperienced. The following I have tried and can recommend:—*Green-fleshed*: Hero of Lockinge, William Tillery, Windsor Castle, Imperial Green, Sutton's Royal Jubilee, Sutton's Perfection, and Golden Perfection. *Scarlet-fleshed*: Blenheim Orange, Invincible, Triumph, and Scarlet Gem.—E. MOLYNEUX.

THE WEATHER OF 1898.

THE weather of the past year has been of a very interesting character, and has shown to a remarkable extent the great dependence of agriculture on the meteorological conditions prevailing during a season. A good farmer may mitigate the injury caused by unfavourable weather by making the most of every chance he may have to counteract its effects on his crops, but he cannot do more. It is useless, for instance, for him to expect a full crop of hay if the spring be rainless, or a good harvest if the summer be only one in name. Horticulturists also, to a great extent, have to depend on the weather conditions for a successful season.

During the past year the early months were of an exceptionally favourable character, the weather being open and mild, with small rainfall—an unusual accompaniment of a warm winter. With the coming of spring, however, a great change occurred for the worse, the weather becoming for the time of year very cold, damp, and sunless, and towards the end of May forebodings of a disastrous season began to be heard on all sides. With the advent of June the outlook became more unpromising still, for during the first few days very inclement weather prevailed, snow and sleet showers falling in many places. In the third week, however, a steady improvement in the weather began, and for the remainder of the summer sunshine and heat became the rule, the warmth and sunshine extending well into the autumn.

This glorious weather completely changed the character of the season, although there was still occasion of complaint—especially over the south-eastern counties—in the unusual absence of rain. After some of the hottest weather experienced during September for over half a century, the inevitable change from summer to autumn took place on the 18th of that month, although the rainfall continued very deficient over the greater part of our islands until well into October. The last three months of the year were, like their immediate predecessors, much warmer than usual; but unlike them they possessed an abundant, though by no means excessive rainfall, so that while the fields yielded an abundant supply of grass farmers had plenty of opportunity to prepare the soil for the crops of the coming year. Upon the whole, therefore, the past season must be reckoned to have been for agriculture generally one of the most favourable of recent years, and it well exemplifies the truth of the well-known saying that "A dry year never beggars the master."

In a short article of this kind it is impossible to give an exhaustive account of the rainfall of the year; but the general distribution will be seen from the following table, which gives the details of fall at eight selected stations situated over our islands.

THE RAINFALL OF 1898 AND DEPARTURES FROM AVERAGE.

	1898	Aberd'n	Leith	York	Liverp'l	Valencia	Bristol	Cambridge	London
		ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ...	0.97	0.68	0.61	1.53	5.54	0.68	0.95	0.78	
February ...	1.73	0.70	1.04	1.75	4.01	1.62	0.59	1.18	
March ...	2.32	1.17	1.16	0.77	1.70	0.87	1.38	1.33	
April ...	4.71	1.67	2.55	1.91	6.13	2.34	1.23	0.90	
May ...	2.96	1.69	2.22	4.51	1.87	3.39	2.55	2.44	
June ...	1.45	1.29	1.87	2.33	2.08	1.35	2.19	0.95	
July ...	0.81	1.27	1.76	0.47	0.87	0.39	1.35	0.72	
August ...	2.67	3.05	3.22	3.80	6.00	3.30	2.03	1.00	
September ...	1.70	1.85	1.34	1.39	4.30	1.13	0.17	0.31	
October ...	2.86	2.95	3.02	3.49	7.16	4.92	1.96	3.01	
November ...	3.28	2.40	2.98	1.69	6.79	2.58	1.65	2.58	
December ...	2.04	1.14	1.89	1.96	5.32	3.53	1.86	2.62	
Total	27.50	19.86	23.66	25.60	51.77	26.10	17.91	17.82	
Average	30.94	23.35	25.95	28.93	55.80	33.88	23.29	24.84	
Departure from average		-3.44	-3.49	-2.29	-3.33	-4.03	-7.78	-5.38	-7.02

The rainfall was deficient, therefore, practically over the whole of our islands, the deficiency being greatest over the south and south-eastern parts of England. In the extreme north, however, there was an excess of rainfall, Sumburgh Head (Shetland Isles), for instance, reporting 5 inches of rain more than the average. Taking our islands as a whole, it will be seen that the driest months of the year were January and July, although over the south-eastern counties September was by far the most deficient in rainfall.

The mean temperature of the twelve months is considerably in excess of the average. In the second table given, the means for each month, and also for the year, at eight stations situated over our islands, will be seen.

THE TEMPERATURES OF 1898 AND DEPARTURES FROM AVERAGE.

1898	Aberd'n	Leith	York	Liverp'l	Valencia	Bristol	Cambridge	London
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.
January	42.5	44.8	43.3	45.0	48.6	44.3	42.4	43.3
February	38.2	40.4	39.7	41.4	45.4	42.0	39.9	41.2
March ...	40.6	41.4	39.4	40.4	43.4	40.3	39.8	40.6
April ...	45.1	47.6	46.4	47.3	48.1	47.7	47.5	49.3
May ...	46.9	49.2	49.3	49.9	51.2	51.5	51.4	52.9
June ...	53.8	56.4	56.1	56.5	55.9	57.3	57.2	58.7
July ...	56.6	59.1	58.9	58.8	59.5	61.2	60.5	63.0
August ...	57.3	59.4	60.7	61.2	60.9	62.7	63.6	65.6
September	56.3	58.1	58.8	58.8	60.9	63.5	61.8	62.8
October ...	50.5	51.5	52.5	52.3	54.4	52.9	53.5	54.2
November	41.8	43.1	44.4	45.4	48.3	45.8	45.4	46.4
December	42.4	45.0	44.4	46.6	49.0	46.6	43.8	45.4
Mean, 1898	47.7	49.7	49.5	50.3	52.1	51.1	50.6	51.9
Av. mean	46.3	47.8	47.9	48.8	51.0	49.2	48.7	50.0
Departure fm. av'age	+1.4	+1.9	+1.6	+1.5	+1.1	+1.9	+1.9	+1.9

The means are those of the daily maximum and minimum readings, and are uncorrected for diurnal range. With the exception of March, May, June and July, the means for each month are well above the average, the greatest excess being shown by the two winter months, January and December. The temperature of December especially was extraordinarily high; at Liverpool and Bristol the means for the month closely approach that of an ordinary April, while at Valencia the mean exceeded it.

Atmospheric pressure over our islands ranged from a maximum of 30.60 inches and more during the last half of January, over the southern counties of England; to a minimum of 28.30 inches and less in the north of Scotland on the 28th of December. Snowstorms, as might be expected, were not much in evidence during the year. There were only two falls of importance; the first an exceedingly heavy, but rather local storm, affecting the counties of Hants, Devon, Dorset, and Somerset, on the 21st and 22nd of February; and the second, a fall chiefly affecting the north and north-west of England, on the 22nd and 23rd of November.

Thunderstorms were chiefly prevalent during June and August. They were very severe and brilliant over the south-west of England, on the 18th and 21st of the latter month. One of the features of the year was the frequent displays of aurora; on the 9th of September especially one occurred of exceptional brilliancy, which was visible over almost the whole of our islands.

Gales were not very prevalent during the year. The severest occurred on the 24th, 25th, and 26th of March, from the north-east, generally over our islands; on the 17th and 18th of October, from the east, over our northern districts; and on the 27th of December, from the south and south-west, over the greater part of the kingdom.—H. H. HARDING, F.R.MET.SOC.

HIPPEASTRUM PROCERUM.—Although this beautiful plant is known thirty years ago, it is still very rare, and is found only in the gardens of a few bulb specialists. It is a native of Brazil, and resembles—so far as the bulb is concerned—some of the *Crinum*s rather than the garden *Hippeastrums*, being often 2 feet long, and covered with dry membranous scales. In the T Range at Kew a fine specimen is now in flower, and it is a considerable source of interest to all who see it. The bulb of this plant is 2 feet long, and from it a stout scape bearing seven flowers is produced. The flowers are 6 inches long and 6 inches across the mouth. The dominant colour is a pretty pale blue, the throat being white with numerous blue spots, and the lower portion of the outer surface of the sepals and the stalks reddish brown. The leaves, when mature, are 1½ or 2 feet long, 1½ inch wide, strap-shaped and curved. A figure of this plant is to be seen in the "Botanical Magazine," t. 5883, under the name of "*Amaryllis Rayneri*." The plant from which that figure was taken was flowered by Dr. Rayner of Uxbridge in November, 1870. According to the description, that plant must have been much weaker than the one at Kew, for the bulb was only 10 inches long, and the flowers smaller; the colour was also slightly different. A second plant at Kew may be seen planted out in the Mexican house, where it is growing well but has not yet flowered.—W. D.

THE "LIFE AND FOOD" OF PLANTS.

THE remarks of Mr. Willis in your issue of last week (page 59) have vividly recalled to my memory the "eye-opener" I experienced with regard to the food and functions of plants when, nearly sixty years since, I had "Lindley's Theory of Horticulture" added to my then very scant library. Some of the theories of that work are now considered obsolete, but the setting forth of the parts that gases play in plant life are not so.

My object just now is to call the attention of your young readers who are in the same stage of development as Lindley's book found me when it was published, and to ask them to ponder the last paragraph of Mr. Willis's article.

The fact Mr. Willis there states is that 95 per cent. of the food of plants is drawn from atmospheric sources and 5 per cent. is obtained from the soil. I have no doubt this may startle some who have hitherto not given any heed to the elements of plants and their sources of food and life. It may also be a lesson to their elders who have not thought of the subject; and to all it cannot fail to appear that the lesson bears most of all on the culture of plants and fruits under glass.

Thanks to cheap glass, trade competition, and improved structures British gardeners are now more than ever able to apply with the greatest nicety heat and atmospheric moisture to the plants and fruits of warmer climes. The days of thin glass, small panes, numerous laps and rickety sashes, also sometimes deleterious gas from old flues are long since forgotten and have never been known by but few of this generation. It cannot, however, be denied that the means for supplying the two elements named—heat and moisture—in due and proper proportions are attended with evils that have to be reckoned with if the healthiest plant life has to be secured.

The almost air-tight manner in which hothouses are now constructed, with large sheets of glass and tight-fitting laps, in itself gives a great advantage to present day cultivators over those of the earlier part of the century, in as far as the greater amount of light and the application of heat are concerned; yet as plant life is, perhaps, as sensitive to a self-corrupted atmosphere as is animal life, the almost air-tight manner in which hothouses are now constructed favours the production of an impure, and what may be called an enervating condition of the air which they enclose, and prevents a natural change of air. It is only required to read Mr. Willis's closing sentences to be impressed with the necessity of having a constant supply of fresh air, under the influence of which plants can live and flourish.

It is not necessary to enter into the practical details of how this circulation of fresh air can be admitted to glass houses, for that is a very easy matter to accomplish according to individual circumstances. The chief point is to be thoroughly impressed with the importance of it. Let me strongly advise those who are entering on a horticultural career to thoroughly study the elements and food of plants and their functions.

I am almost afraid, Mr. Editor, that it may encroach too much on your valuable space, and try the patience of some of your readers, but now I have pen in hand I would like to look back a little and refer to some of the good results of methods that are now obsolete. As you know, old men, when they get shunted into a siding, are apt to live perhaps too much in the past. What I am thinking of is that the march of horticultural progress has carried us almost entirely out of the sight of the fermenting hotbed composed of stable litter and leaves. The clank of the engineer's hammer has completely drowned the thud of the manure fork. Who regrets this? Still it becomes a question whether in the improved appliances of supplying warmth and moisture we have not left behind us some potent-for-good condition consequent on the use of hotbeds and "McPhail" heated pits.

Who that has used these does not remember and know how well many plants used to thrive by these old appliances—how many a sickly plant when placed in these pits and frames experienced almost a resurrection from the dead? The sere and yellow leaf found in them a sanatorium, and became green and full of substance under the influence of the gases evolved by the fermenting stable litter and leaves. The largest Pine Apples that I or others ever grew were produced under the influence of these old methods; witness the 16 lbs. Providences grown in the early forties at Gunnersbury Park, and the grand Smooth Cayennes at Frogmore in what were called dung pits. The finest early Black Hamburgh Grapes I ever saw ripened in April were grown with a bed of fermenting material on the inside border, and many other things might be mentioned.

These remarks are not made under the remotest idea of recommending a return to these laborious and untidy methods of supplying heat and nourishing gases. This is far too expeditious and advanced an age for that.

What I want to do is to ask our scientists, like Mr. Willis and others, if it be not within the bounds of possibility to charge our hothouse atmospheres with what was evolved from the old fermenting material with such good results. I have myself attempted something like it by evaporating the soluble portions of the fine old Peruvian

guano—now unattainable—from troughs or pans placed in hot water pipes. The finest Pines I ever grew were so treated, as some who may read these remarks know. I have had excellent results in the case of Vines, where the inside borders were sprinkled with urine and guano. But cannot our fellow labourers and teachers, the scientists, put us on a better method of feeding more through the atmosphere?—D. THOMSON.

[We wish all our young men were as alert as some of the old ones. Space will be afforded if Mr. Willis can see his way to deal with the subject suggested.]

LONDON GARDENS OVER FIFTY YEARS.

No. 3.

DOUBTLESS the influence of ancestry upon character and tastes is considerable, and often operates to advantage, as in the case of the French refugees who came to England after the revocation of the Edict of Nantes in 1685. These emigrants, many of whom were by trade weavers, are said to have established the silk industry in Britain; and something more they did, which was to develop a love for garden flowers amongst those with whom they lived and worked.

About the end of the sixteenth century, all over France, people devoted their time and money to the culture of flowers, remarkable for their size, form, or colouring, and prominent on the list of favourites were Lilies, Tulips, Anemones, and Ranunculuses. This fact must be added, however, that the Frenchman's enthusiasm for flowers came to him from Holland, which is another feather in the Dutchman's cap. But Spitalfields, where the French silk weavers clustered, soon became famous for its choice flowers, specially Auriculas and Tulips, which figured in many shows of Georgian times. Walking thereabouts fifty years since, amid its busy population, more crowded than in any other part of London, an observer noted how both the people and their plants suffered from impure air or lack of light.

Let due honour be given to the French flower lovers of Spitalfields, and to the earlier emigrants who came in the sixteenth century from the Low Countries to teach our fellow countrymen many lessons in the art of gardening. The silk weaver was wise in his day, but an artisan or mechanic who at the close of this century gives his spare time to his garden plot has advantages that were only beginning to appear at its middle. One of these is, perhaps, more to his benefit than to that of the dealer in plants—prices have fallen all round; still, it may be said that if the profit is less the business is larger. Both French and Flemings had a liking for bulbous plants, and we need only look round London gardens or parks in winter and spring to see how their influence has extended itself; for there never has been a period in British horticulture when bulbs were so largely planted as now, not even in the Tulip mania, and the varieties our catalogues show would have amazed the gardeners of the early years of Victoria's reign. They would have been delighted, too, at the spectacle of acres of Narcissi and Daffodils cultivated for the market in some of the outlying London suburbs; a satisfactory proof that all our bulbs do not come from Holland. Many gardeners of the past generation met with disappointments in consequence of their applying various manures that did harm because they were charged with ammonia, which bulbs dislike, and the best outdoor manure for them is stated to be phosphatic basic slag; this, however, needs some precautions in use.

Again, the number of garden annuals which will thrive about large towns has been considerably increased, and seeds of such plants may be bought cheaply everywhere, and if the cultural directions are followed, a nice show may be made during the summer, afterwards the seeds can be saved for another sowing. Then the bedding out method, which, with all its defects, has held its position a good while now, made a great improvement in flower beds, and the plants required for this purpose are obtainable at a much lower figure than they were sold at in 1818. Also, for several years, the working classes of London have been benefited by a free distribution of surplus bedding plants during the summer, which is carried out annually in several parks and public gardens: besides, there are private gifts of similar kind that we seldom hear of through the Press. It is also widely known now, and acted upon, that the ordinary soil of a London garden will not produce much worth looking at unless there be a judicious application of manure. Fifty years ago we did not see what is a familiar sight along suburban streets or roads in this day, people out early with spades and baskets gathering up horse droppings and other substances which may help to fertilise the unpromising London clay.

Some of the gardeners who were accustomed to take water for their grounds from the streamlets which flowed deviously into the Thames might occasionally have found this a fertilising fluid, since, when houses increased, many of them drained into these streamlets, which were finally turned into sewers, or have dried up. In connection with London's short water supply of last autumn alarming reports were propagated about the state of the Thames, which of late has, no doubt, undergone a reduction in the average flow, partly through the large demands on it by water companies, partly because

it is not fed as once it was, the springs and rivulets along its course having greatly decreased in number.

When a lad I well remember seeing the Westbourne, though polluted, still running as an open stream across Pimlico or Belgravia, and ending in the Thames near Ranelagh Gardens. Rising at Hampstead Heath, it afterwards received the waters of the Coldbourne (Kilburn) and other brooks, and did indeed at one time supply chiefly the Serpentine lake in Hyde Park, through which it reached Knightsbridge. Actually in its best days, we are told, famous for its trout, the Westbourne's usual speed was notable, causing some people to call it the "rapid Rhone." Hence, after a heavy rainfall, it had the unpleasant peculiarity of overflowing and sending torrents of water over gardens and into houses adjacent. It reached the Thames near where Chelsea Barracks stand, after finally skirting the meadows and gardens of Ranelagh.

Then the old Grosvenor canal was not interfered with until some years after 1848, and between this and the Thames much of the land was open, and upon it they raised Cabbages, Lettuces, and Potatoes for market. It was really a remnant of the ground belonging to the "Neathouses," celebrated for its rich crops as far back as the reign of Charles II. For some distance along the canal a sloping bank covered with nettles divided it from the gardens, and I remember a Pimlico entomologist years ago getting the labourers to hunt on these nettles for the caterpillars of tortoiseshell butterflies. Not one in a thousand of the travellers to or from the busy Victoria Station recalls the fact that just there was the basin of the Grosvenor canal. Some have supposed that this was the remnant of an ancient stream which crossed what is now St. James' Park, and left the Thames at Westminster, bounding what was called the Isle of Thorney. Another rivulet which has vanished from West London rose at Wormholt Scrubs, and ran into the Thames opposite Battersea Church, receiving near the end of its course the contents of sundry ditches which intersected the old market gardens between Chelsea and Fulham. Along a part of its bed are laid the lines of the West London Extension Railway.

It seems strange to us, does it not? to think of the vicinity of Westminster as a place in which choice vegetables and fruit were raised for the Court and aristocracy, yet such was the fact; but long before the reign of our present Queen the increased smokiness of London had very much interfered with outdoor culture, and so the land was by degrees given up to other uses. The Neathouse gardens were situated between the present Vauxhall Bridge Road and Chelsea; as a place of popular resort, they are often referred to in history. Artichokes, Asparagus, and Melons are named amongst their specialities; these, and also other vegetables, were grown along the "Five Fields" adjacent, now occupied by Belgravia, and which was never so dreadful a locality as the authoress of a poem published in 1851, entitled "Belgravia," represents it to have been at one time. Part of this Five Fields remained unenclosed fifty years ago, Eaton Square and Ebury Street not being completed, much of it is still garden ground, forming centres to stylish squares. We should have seen, too, that some nurseries of small extent had come into existence about this part of Pimlico, owing to the increased demand for flowers, though before long most of these had either closed or removed to the west.

One of these which was worthy of note occupied the place of the small public garden of Ebury Square, stated to have been originally the homestead of Ebury or Aybery Farm, the fields extending many acres round in the times of the Tudors. A handsome row of Limes, planted during the reign of William III., shaded the road from Ebury to Ranelagh House; these were felled early in this century. The nursery remained open till 1884, and so vanished the last of the Westminster nurseries. The Duke of Westminster opened the square as a public garden. Efforts have been made of late to get some more important and larger West-end squares made free to all during at least a part of the year, but with no success as yet. Of course there are difficulties and objections; still to many, both young and old, access to these pleasant gardens would be a boon.

In 1848 the centre garden of Eaton Square on the north side was the nursery of Mr. Tuck. Subsequently he removed to Sloane Street, where he continued many years, occupying the ground which had belonged to Salisbury of Chelsea and Brompton, author of several books on botany and gardening. Then Dennis had a nursery where St. Barnabas Schools and other buildings stand now, near Old Chelsea Bunhouse. He went towards Cremorne about 1850, and had some specialities in fruit trees; he also raised several good Pelargoniums. Extensive changes were made in this district, as also in Westminster, during 1851 and after, connected with the formation of Victoria Street, leading to the Abbey, which crossed the remnant of Tothill Fields and the green space round what was marked even on recent maps as Palmer's Village, Westminster. This street cut up as well what people called Elliott's Park, a demesne attached to the mansion of the proprietor of the Stag Brewery, from which at one time an avenue of old trees led to Palmer's Village and the artillery ground of historic fame. The grassy centre of Vincent Square is a fragment of Tothill Fields yet extant.—J. R. S. C.



DENDROBIUM ATRO-VIOACEUM.

THANKS to recent importations this beautiful species is now within the reach of all, and where there is heat at command should certainly be grown. The flowers are of long duration, lasting some thirteen or fourteen weeks, and the colours are so quaint and novel that they always command attention.

Having grown *D. atro-vioaceum* (fig. 16) successfully for some years, perhaps a few notes respecting its culture might be interesting. In the first place this species should be grown in the smallest pans possible, as it detests soil that is the least sour, but at the same time water must be given freely when in active growth, with less during the period of comparative inaction, though never allowing the compost to get very dry. The plant I find thrives well in a compost of one half best peat fibre, broken in lumps as large as walnuts, and nearly as much fresh green sphagnum moss, and must be potted moderately firm. They should be hung close to the glass, in a house that never goes much below 60° Fahr. In hot weather they must be carefully examined every now and then for red spider and thrips, which if allowed to get a foothold will soon injure the leaves and cause them to fall. This species I find likes a shady position in the house rather than a sunny one.—J. BARKER, *Hessle*.

CULTURE OF CALANTHE VEITCHI.

AS we grow *Calanthes* successfully here, I venture to forward a few remarks regarding their culture and an illustration of the house in which we grow them. The structure has a central path with a slanting stage on each side, these being covered with a groundwork of *Adiantum cuneatum* edged with *Panicum variegatum*. When the *Calanthes* are in flower we dispose them amongst the Ferns, and these by covering the pots and pseudo-bulbs, materially enhance the effect.

Calanthes, although simple to cultivate, are perhaps the best and most useful winter-flowering Orchids we possess, and the long time they keep in flower should induce cultivators to grow them far more extensively. I am surprised that florists and market gardeners do not turn their attention to the culture of *Calanthes*, especially those who have several houses devoted to Cucumber growing, as the conditions here requisite suit *Calanthes* admirably.

Our mainstay is *C. Veitchi*, as we consider it one of the best to grow in quantity. The bold habit of carrying the flower spikes, and their gracefully arching character, make it more suitable for decorating than any form of which I know, while the beautiful rose colour is very pleasing under the electric light. After flowering we give the bulbs a rest till they show signs of restarting into growth, when they are potted singly in 5 and 6-inch pots, with ample drainage, using nothing but good turfy loam as rough as we can procure, and a little dry cow manure. Great care is taken in watering till the pots are full of roots. Then we give them sufficient for their welfare in a tepid state, and when the bulbs have swelled a little and growth is active we give liquid manure about twice a week till the flower spike appears. After this clear water is reverted to, and if too much is given the pseudo-bulbs are apt to turn black and decay at the base.

By the above mode of culture our bulbs are from 10 to 12 inches in length, and the majority of them throw up two flower spikes from the base, and we have a few that have three spikes which, although not quite so large, are very useful.—W. K. PETTIGREW, *Hewell Grange Gardens, Worcestershire*.

[The photograph sent by our contributor conveys but a poor idea of the beauty of the combination he so ably advocates, and which we have more than once seen adopted. Unfortunately the picture is not suitable for reproduction.]

CYPRIPEDIUM ARTHURIANUM.

THIS is one of the most distinct and beautiful of the *C. Fairrieanum* crosses, which are now getting quite a numerous section. It was raised from the latter fine species and *C. insigne*, its parentage being easily seen in the hybrid itself, which has the drooping sepals of *C. Fairrieanum* with the colours mostly of *C. insigne*. Though not a particularly vigorous plant, it thrives well with ordinary care. The plants may be repotted in spring, spreading the roots out carefully as the work proceeds, and working the compost down among them, the latter consisting of good loam, a little peat, and some roughly chopped sphagnum moss, with abundance of crocks and charcoal. The pots used should be of medium size, for, as noted above, the habit is only

moderately vigorous, and the plants will not be satisfactory if stuck into the middle of a large pot.

Cypripediums differ from most Orchids in that water may be given immediately after repotting, the roots being of a stronger constitution than those of the majority of kinds, and delighting in ample moisture always. It may be grown in an intermediate temperature, or in any house where *C. insigne* thrives; but it is more easily checked than this old species, and this fact must not be lost sight of. It was raised in the nurseries of Messrs. J. Veitch & Sons, as was the pretty variety *C. A. pulchellum*.

ONCIDIUM CAVENDISHIANUM.

The fine handsome spikes of this species are now opening, the beautiful yellow tint being very clear and pretty. It is an easily



FIG. 16.—DENDROBIUM ATRO-VIOACEUM.

grown kind that should be in every collection, flowering at mid-winter and lasting an immense time in perfect order if care is taken not to wet the flowers. The roots are strong and vigorous, liking a very rough open compost and abundance of water all the year round. It likes an intermediate house and a good light position. It is a native of Guatemala, where it was discovered by Mr. G. Ure Skinner, and sent home to Mr. Bateman in 1835.—H. R. R.

BARK PRUNING.

THE objection of "W. S.," page 60, to ringing as a substitute for root-pruning, is simply that it would not cause the roots to become of a fibrous nature. He does not question or doubt the fruitful results accruing therefrom as recorded by the Editor, Mr. E. Luckhurst, and myself.

I think it will be admitted that luxuriant growth is invariably the outcome of large roots escaping from their intended sphere and penetrating into a strong subsoil. If, then, ringing, being resorted to, subdues the exuberance and causes fruitfulness, but does not result in the roots becoming more fibrous, it is evident that fibrous roots are not a *sine qua non* in fruit culture. The chief aim of the cultivator is not the production of fibrous roots, but of fine fruit in quantity. If the latter be obtained, why need he be anxious as to the form and location of the roots?

I do not wish to underrate the value attached to the fibrousness of roots, but I do say that if the roots become large and strong

thereby causing exuberance, it is far the better plan to use the simple and effective remedy of ringing, and allow the roots to remain as before.

There are, it is true, cases where only root-pruning will mend the grievance. If the subsoil, into which the roots have plunged, be of a wet stagnant nature through improper, or the absence of any drainage, it is evident that ringing would be utterly useless, but in the majority of cases I think it should supersede the laborious task of root-pruning, giving as it does equally good results at less cost.—W. R.

CHAFF AND GRAIN.

ERE the number for January 19th of the aged, but ever new, *Journal of Horticulture* is shelved in the gardener's home, or in the bothy, I would fain ask for it a second reading, particularly in the bothy. If second thoughts are best, second readings, like second siftings, oft disclose the grain amid the chaff. This number, methought, opened unusually chaffy. To the strains of "A Lost Chord" upsprang a "Fenn and a Fungus" in mortal combat. 'Twas grand to see the champion of Potatodom puffing anti-blight (through a bellows, I mean). No matter; he teaches some fine lessons to practical gardeners, and the lesson for the day as given out by him seems with sonorous sound to say, Work—work—work! That charming writer Mrs. S. C. Hall once said of a certain race, "Oh, if those people would only work instead of talking, how different they might be." Somehow life—a gardener's life—seems too short to overtake a tithe of the science meted out to us. And somehow, too, the pilots of "our Journal" seem inclined to guide us back into the old familiar channels. Perhaps, after all, there are fewer rocks and less wrecks in them.

Is there really a change in this direction? It looks like it. The very number of the Journal snipped from seems imbued with the spirit of common-sense teaching as opposed to scientific searching. It is almost—nay, quite—startling to find, on page 41, a chockful of science gardener chatting about "muck, handy lime, and tell-tale soot," and generally praising the blissful ignorant past. Note, young men, what Mr. Abbey says of "the good old times—8s. a week and bothy for a growing lad far on in the teens." But thereby hangs a tale. I will not, however, tell it, but the sequel is that 8s. then often went farther than 18s. now, although the bothy and the kitchen were a mile apart.

Turning over to page 48, "Soil Analysis," we reach (in the second paragraph) the "half-way house between exact science and rule-of-thumb." A very safe place, too, one thinks—for gardeners. Here men wearied with many things may rest in comparative security, and if threatened on the one side by advanced scientists, or on the other by those in the rear of elementary teaching, may say, "Let 'em all come," for this "half-way house"—the golden mean—is a tower of strength.

Again would I ask young Britons of bothydom not only to read their Journals, but to sift out the common-sense morals they convey. A grand one is, I think, easily discovered in the leader of the latest number to hand, "Life and Food," page 59. Under this simple heading that mysterious link between the two great kingdoms of life is more than hinted at. It is not a chaffy subject, but, although heavy with chemical constituents and saturated with science, intensely interesting. Without courting mental dyspepsia a modest sampling is able to yield foretastes of the pleasure and profit in store for those who come to regard the objects of their care as living, breathing subjects, demanding due recognition as such from thinking heads and ministering hands. Granted this, then more work is merged in a labour of love conducive to the best results.

It is not easy to describe the subtle influence of the love of gardening. It may be noticed, however, that some plants in particular seem "uncertain, coy, and hard to please." This arises from their character being misunderstood; yet some few are able to woo them into health, happiness, and beauty. Witness those grand specimen plants and grand specimen gardeners of the past, aye, and of the present too. Some of them were, and some of them are still, terribly deficient in revealed science, but, judging by results obtained, what they lacked in that direction was more than made up for by that love which amounts to a passion reciprocated, in the silent life of their subjects. One such I knew who was rarely beaten with his twelve stove and greenhouse plants. He worshipped them, and though his knowledge of book science was nil, mentally analysed them and knew their wants better than any chemist could tell him. Science may surpass the old miracles of faith, but it will never supplant intuitive love, and one questions still if it has even shaken the great "muck" doctrine.—WATCHMAN.



WEATHER IN LONDON.—The frost, which remained with us from Wednesday until Saturday last, appeared to meet with general appreciation. It was not very severe on any morning, but still water was thinly coated over on Friday. During Saturday the coming change could be felt, and Sunday was a thoroughly wet and dull day. The rain hardly ceased until evening, and then only for a very short time. Monday opened wet, but became dry and colder later, followed by frost in the early hours of Tuesday morning. Wednesday, like the preceding, was dull, foggy at times, and cold.

— WEATHER IN THE NORTH.—The prolonged course of rainy weather has been followed by a week of pretty keen frost. From the 23rd ult. to 28th from 13° to 17° were daily registered. On Sunday, and again on Monday afternoon, there was some appearance of a change to milder weather.—B. D., *S. Perthshire*.

— "SINGLE-HANDED" GARDENERS.—At our show we have a class for "single-handed" gardeners. The regulation reads as follows:—"A single-handed gardener is a man without regular assistance." It is a source of endless trouble to the Committee to decide questions as to when a man ceases to be eligible for this class. Will some brother secretary help me with his experience to define a "single-handed gardener?"—T. W. THORNTON, *Beckenham Horticultural Society*.

— PRESENTATION TO MR. J. CARRUTHERS.—Mr. James Carruthers, lately gardener at Hillwood, Corstorphine, has recently been the recipient of a present from his friends to show their appreciation of his services to horticulture, and the high esteem in which he was held. This was supplemented by a contribution from the Scottish Horticultural Association. A small deputation of subscribers, headed by Mr. R. W. E. Murray and Mr. M. Todd, waited on Mr. Carruthers, at Ravelston, where he has acquired a business, and presented him in name of the subscribers with a cheque for over £60. Mr. Todd happily expressed the great pleasure it gave the subscribers to show their hearty goodwill towards him, congratulated him on his improving health, and expressed the warmest wish of his many friends that his strength and activity would return, and that great success would attend his new business venture. Mr. Carruthers replied in a few brief remarks.

— HANLEY FÊTE.—We have been favoured with advance proofs of the schedule of the Horticultural Fête that is to be held at this Staffordshire town on Wednesday and Thursday, July 5th and 6th. The prize list and the rules governing exhibitors are very comprehensive, and it will be scarcely possible, after a careful perusal of the latter, for anyone to get on the wrong track. Slightly over 100 classes are embodied in the list, these being divided into sections that are open to all, open to gardeners and amateurs, and open to cottagers only. Several of the leading firms offer prizes for various products, and these of course are subject to the customary stipulations. The Society will give many liberal prizes in several classes, notably £70 for a group of plants; £30 for a group of Orchids; £22 10s. for twelve specimen plants; £12 for eight exotic Orchids; £15 for forty-eight Roses; £13 for thirty-six Roses; and £22 for a floral display, with numerous others. The Secretary is Mr. J. Kent, The Park, Hanley, from whom full particulars may be had.

— DECORATING FRUIT EXHIBITS AT FLOWER SHOWS.—Discussions have been heard of late as to whether exhibits in fruit classes should be enlivened by floral decorations or not. At some shows I have found it difficult to distinguish one entry from another because the exhibits were so massed together; so confusing, one had to stop and consider which was one entry and which was another, and so on. I think they ought to be a little more distinct in arrangement than they sometimes are. At Chrysanthemum shows some societies offer a prize for a specimen Palm, and we do not usually find the exhibits massed in a corner or other similar space, but distributed where their presence is more needed and effective. In decorative classes, such as for epergnes and vases, the exhibits are often quite spoilt by being so crowded together; and I would suggest that if these epergnes and vases could be disposed at intervals between collections of fruit, the effect would be far greater, and the fruit tables not seem so monotonous, while judges would be aided in making their awards to the decorative exhibits.—R. H. JEFFERY, *Nursling, Southampton*.

— **THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—The sixtieth anniversary festival dinner of this Institution will be held at the Hôtel Métropole on Wednesday, June 28th, under the presidency of the Rt. Hon. Earl of Derby, K.G., and not on July 28th, as stated on page 71 of our last issue.

— **GARDENING APPOINTMENTS.**—Mr. James Threlfall, for many years in the Gardens, Swanmore Park, Bishop's Waltham, has entered upon his duties as head gardener to Colonel R. Pilkington, M.P., Rainford Hall, St. Helen's, Lancashire, where no doubt the experience gained under Mr. E. Molyneux will stand him in good stead. Mr. A. G. Nichols, for more than eleven years gardener at Nuneham Park, Abingdon, has succeeded Mr. Turton at Maiden Erleigh, Reading.

— **THE IMPORT TRADE IN POTATOES.**—Potatoes to the value of £1,913,912 were imported into Great Britain last year. Of this sum £547,000 went to the Channel Islands, £457,000 to France, and £470,000 to Germany. The most remarkable feature of this import trade in Potatoes is the great development which has taken place in the exports from Germany. Last year, as just stated, over £420,000 worth were exported from that country to Great Britain, though in 1897 the value of the exports amounted only to £67,907, and in 1896 to the merely nominal sum of £3208.

— **ANEMONE BLANDA.**—This is the earliest of all the Anemones in coming into flower, and often opens before Christmas. Like many others of the early flowers it is not so forward as usual this season, and the first blooms were out on January 17th. It continues to give a succession of flowers for several weeks, these varying through all shades from white to the darkest blue when raised from seed, but may be kept true to colour by division of the roots. Both *A. blanda* and *A. fulgens* are subject to decay if left more than two seasons in the same position, and it is best to lift them when the foliage withers, and dry the roots on a shelf. They may be broken up and replanted, in ground that has been previously manured and dug, early in August; if kept longer in a dry state the roots are weakened, and the flowers will be smaller in consequence.—W. H. DIVERS.

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—On Saturday evening the twentieth annual general meeting of the above Association was held. The financial statement showed a balance in hand of some £80. The Lord Mayor, Wm. Oulton, Esq., was nominated as President for the year: Mr. Thos. Foster, Chairman; Messrs. Harwood, Banner & Sons, and Mr. R. G. Waterman, Auditors. Mr. W. Dickson, who has held the post of Secretary for a number of years, was obliged to resign owing to ill-health, and Mr. Sadler, his partner, was elected to fill the position. The Committee was also elected. A movement is on foot for the Society to try to amalgamate with the Royal Lancashire Agricultural Society, which is to hold its show in Liverpool this year, and for which great preparations are being made, but negotiations are not completed. It was unanimously resolved to vote 3 guineas to the Gardeners' Royal Benevolent Institution, and a sum of 2 guineas to the Royal Gardeners' Orphan Fund. The usual votes of thanks terminated the meeting.—R. P. R.

— **ROYAL BOTANIC SOCIETY OF LONDON.**—The first of a course of lectures on seed-testing, with demonstrations, was given Monday last in the lecture room of the Society at the Gardens, Regent's Park, by Mr. D. Finlayson. The lecturer deplored the fact that while all over the Continent and in America seed-testing stations under Government control had been established, where farmers and agriculturists could have their seeds tested, and obtain statistics and information, in England, where the need was greatest, these questions were left to a few private persons, or one or two societies, whose researches were limited to their own members. Considering how great was the annual loss to agriculture in this country on account of seed adulteration, the selling of seed which, owing to age or other causes, has lost its vitality, and the mischief done by noxious weeds sown with it, and how inefficient were the means for detection possessed by farmers and others, it was a matter of surprise that the question of public testing stations had not been more generally taken up. The lecturer gave three simple rules—first, that good varieties only should be purchased; secondly, that the heavier it was in comparison with its bulk the more likely it was to germinate; and thirdly, that the impurities should be carefully studied. Bits of dirt and debris were of far less consequence than the minute seeds of weeds. He instanced one apparently clean sample he had tested, which contained enough weeds to produce over 5000 of the worst kind for every acre sown. The lectures are to be continued every Monday afternoon to March 27th. [We fully believe that seeds as sound, clean, pure, and good are supplied by British firms of high repute as any that are sold on the Continent, and we suspect cheap rubbish is to be had abroad as well as at home.]

— **ROYAL GARDENERS' ORPHAN FUND.**—The annual general meeting of the subscribers to this Fund will be held at Anderton's Hotel, Fleet Street, London, E.C., on Friday, February 17th, for the purpose of receiving the report of the Committee and the accounts for the past year; to elect officers for the ensuing year; to elect nine children to the benefits of the Fund, and to make certain alterations in the rules. The chair will be taken at three o'clock. The poll will close at 4.30 P.M., after which no votes will be received.

— **HORSERADISH.**—It is a good plan to replant a plot of Horseradish each season, and the earlier this is done the better. Straight pieces of root about a foot long with a single crown attached to each, and all the roots rubbed off with the exception of a few at the base, form the best material for planting. The soil should be deeply dug, but not manured except at the base into which the roots can pass. Plant these pieces a foot apart, placing them straight down in deep holes made with a dibber, and press the soil round them. Keep the ground clear from weeds throughout the summer, water if necessary, and in the autumn the roots will be fit to dig.—E. D. S.

— **TRAPPING BULLFINCHES.**—On page 494, December 29th, 1898, in "Notes and Gleanings," Mr. James Hiam kindly gives "C. N." "information on trapping bullfinches." As I have caught birds and killed them I can hardly be hard on Mr. Hiam, but I am quite sure I will never do it again. Sparrows, perhaps, might be trapped because very numerous, mischievous, and good for food, but our beautiful song birds and lovely plumaged birds never. We need them to sing and trill, to adorn and cheer our beautiful hills and dales, and woods and lanes. Let Mr. Hiam tell his inquirers to mix soot and lime, adding a wineglass of petroleum to every gallon, syringe his trees, and he will not lose many buds. Renew as needed.—AVIS.

— **MR. EDWARD OWEN GREENING.**—This gentleman, as is widely known, is the Secretary of the Agricultural and Horticultural Association, and the moving spirit of the great co-operative shows which are annually held at the Crystal Palace. He is imbued with a deep love of gardening, and through his agency many workers in various handicrafts have been induced to practise it who would otherwise have been left outside the fold. All this contributes to the general good, because when a multitude of persons are induced to begin gardening, and who derive satisfaction from it, there is no knowing where they will end. Mr. Greening is a man of great enterprise, and has by a happy conception obtained expressions of opinion on gardening from celebrities in other walks of life, such as H. Rider Haggard, Dean Bradley, Miss Braddon, Mrs. Fawcett, Charles Booth, Sir John Lubbock, "Ian MacLaren," Dean Hole and many others, whose portraits and appreciations he publishes in his annual "One and All Gardening." He has also the co-operation of his practical friends Mr. D. T. Fish and T. W. Sanders, who are equal to the treatment of all gardening subjects, useful and ornamental. Among the copious illustrations the greatest novelties are those employed in the potting of plants, which in their way are unique and striking objects of resourcefulness.

— **THE 1866 INTERNATIONAL SHOW COMMITTEE.**—By the recent death of that fine old veteran and illustrious horticulturist, Mr. John Lee, the now comparatively few survivors of the executive of that long to be remembered event, the Great International Exhibition of 1866, are materially reduced. I believe of those remaining there are but Mr. W. Paul, Mr. W. Bull, Dr. Masters, Mr. H. J. Veitch, Sir D. Cooper, and Mr. R. Dean. Thirty-three years is a large slice taken out of any man's lifetime, and in 1866 the late John Lee was sixty-one years of age, the leading spirit of one of England's great nurseries and a horticulturist of world-wide reputation. To have remembered him when some recent honours were distributed would have been an act of excellence; but he, like some other illustrious greybeards, was overlooked. We have not so many John Lees in horticulture that we can afford to ignore them. Somehow the enterprise shown by the old ones thirty-three years ago seems to be lacking now, for no one has the courage to promote—and here, too, in the greatest and foremost gardening country in the world—another great international exhibition. They can do these things abroad, but we do not now. More's the pity. How fittingly could we next year celebrate the close of the nineteenth century, the most wonderful century of years in history for horticulture, for how marvellously has gardening developed in that time! Those who are young may live to see great things in the twentieth century, but they can hardly see greater relative progress than the end of the nineteenth century has produced. Not a few of the old ones in horticulture would like to see one more great international show before they pass away. It may be added that, in addition to those named on page 63, Mr. Owen Thomas was present at Mr. Lee's interment.—WANDERER.

— **RICHMOND HORTICULTURAL SOCIETY.**—We are requested to state that the twenty-fifth annual Exhibition of this Society has been fixed for Wednesday, 28th June, 1899, in the Old Deer Park, Richmond. The Secretary is Mr. C. R. King, George Street, Richmond, Surrey.

— **A GARDENER'S ALMANAC.**—Mr. S. Heaton, the energetic Secretary of the Isle of Wight Gardeners' Association, has sent us a copy of the Society's Almanac for 1899. It is a most creditable production, combining the artistic and the useful in the best degree. In size it is about 3 feet 4 inches in depth by 2 feet in width, and the whole of the sheet is covered with calendrical notes, tables, postal information, lists of members, and other matter of horticultural interest.

— **COTONEASTER MICROPHYLLA.**—What a splendid plant this is for the winter decoration of walls, banks, and rustic fences. Covering the whole of the south front of a neighbouring cottage is a magnificent specimen, fully 12 feet high, and loaded with its attractive berries. The warmth derived from the wall no doubt has much to do with its freedom of fruit production. Be that as it may, this evergreen might with advantage be much more freely employed for such a position than it seems to be at present.—E. M.

— **THE FROST.**—The recent spell of moderate frost has been serviceable in solidifying sap, and holding what threatened to be precocious leaf and flower development in useful check. But still little of good will have been done if followed at once by a mild forcing variation. We need such weather as was the frost for a month at least, and that would then leave us on the margin of March, when with more sunlight and prolonged days much useful garden work may be done. The spell of frost has enabled much moving of manure and other soil dressings to be done freely without harming the soil or garden paths. It has helped the work of tree pruning where neglected, and it has specially facilitated the collection of leaves for storing and decaying where too much moisture has been in the way. Altogether we are getting an ideal winter.—D.

— **OUTDOOR VIOLETS.**—Owing to the extremely mild season experienced up to the present there has been no lack of these sweet flowers, which are always welcome. At the time of writing established plants of The Czar, growing under the protection of a fruit wall, are throwing up an abundance of flower, and though the stems are yet short, they are none the less appreciated. It is not everyone who has the facilities for growing Violets in frames, and in the absence of such greater store is set on the outdoor blooms. There are few gardens which do not possess sheltered nooks and corners suitable for the reception of such varieties as Princess of Wales and the old favourite mentioned above. When warm spring days appear they flower profusely, and the blooms which are obtained now seem all the sweeter and more pleasing because they come a little before the orthodox time.—H.

— **FLOWERS AND VEGETABLES IN TIBET.**—Messrs. James Carter & Co. write from 237, High Holborn:—"Although many parts of this enormous Central Asian territory have not yet been trodden by Europeans, it may interest you to know that we have a lady customer at Yatong—the only British resident, we believe, in that city—who possesses a garden and grows vegetables and flowers. Her communications reach us with regularity via Darjiling. Quite recently we have received a report upon the value and adaptability of these products in that climate, 10,000 feet above the level of the sea, where snow falls sometimes in May and begins again in October. Amongst the information given we are told that Tomatoes produce flowers but no fruit, Onions decline to form a bulb; Cabbage, Carrot, Turnip, and Mustard and Cress are excellent. Peas are good at certain times. Nearly all our common garden flowers proved a success."

— **SCHOOL CHILDREN'S HERBARIA.**—Of the premiums offered for herbaria to the school children of Hartford, Connecticut, Mrs. Seliger says, in "Meehan's Monthly":—"We have had our herbarium exhibition of what the school children brought together. It was the centre of attraction at the Chrysanthemum Show, and a more pleasing feature one cannot well imagine. Notably perfect was the arrangement of displaying the flower sheets on double screens, hooked together and standing free, with a passage between the rows. This showed to great advantage the specimen collected. About 6000 of such had been sent in for the contest. All of them had some merit of more or less degree, and considering this is the first occasion that this has been set in motion it was a grand success. Many visitors were surprised that we have so many native flowers, but you know the least and often most noxious weeds make the prettiest specimens for herbaria, while bright and showy flowers mostly show to disadvantage on account of having lost their colours."

— **PROTECTING CELERY FROM FROST.**—Frost and damp combined are injurious to Celery at this period, and some simple but effectual means must be provided in order to protect the plants which remain in the ground. Covering with litter may serve a temporary purpose, but it is not sufficiently reliable as a complete protection except for the soil. The best plan is to nail two boards together and invert over the plants, using litter for the ridge below. This covering may be easily removed and readily replaced.—S.

— **LAWNS OLD AND NEW.**—If this had been the title of a well printed and illustrated manual just issued by Messrs. James Carter & Co., few persons would have disputed its appropriateness. However, though the actual title is somewhat more diffuse, it is not less expressive of the matter over some twenty pages. This pertains to the formation and renovation of lawns for various purposes and grassy grounds generally. The information is clear, concise, and practical, evidently the outcome of successful experience, and the details may be followed with advantage in carrying out the lawn work described.

— **ASPARAGUS.**—In making a new plantation of Asparagus from seedling plants, whether in single rows or in beds, it is advisable to grow the plants two years before finally planting them for the purpose of separating the male from the female roots. It may not be generally known that the male plants throw up a much larger per-centage of stalks, and therefore are the more desirable. In testing the roots for this purpose all those that bear seed berries the second year should be discarded. If the plants are put out in rows 3 feet wide, taking out a trench 9 inches deep, the soil can be thrown into a ridge down the centre upon which some summer crop may be grown. The soil can be employed annually for blanching the Asparagus heads where this form of production is appreciated. The trenches, too, afford ample scope for watering the roots with liquid manure to assist vigorous growth.—E. MOLYNEUX.

— **MARGUERITE CARNATIONS.**—I notice Mr. A. Outram, in his notes on Luton Hoo Park on page 30, speaks of the Marguerite Carnations, lifted from the open ground, that he saw in flower there. It is questionable whether the usefulness of this class of Carnations is fully appreciated for providing bright flowers at a dull time of the year. Not only are they useful when lifted in the way described by your correspondent, but also when grown entirely as greenhouse plants. A method followed successfully by the writer was that of sowing in shallow pans early in March and allowing the seeds to germinate on a shelf in a warm pit. The first potting was into 4-inch pots, growing the plants near the light in a cool compartment. Subsequent shifts were given till the plants were in 6-inch pots, in which size they flowered. A cold frame or a sheltered position outdoors is suitable for the plants during the summer, and in the autumn and winter they make a bright show in the greenhouse and conservatory. There is generally a percentage of single flowers, but this is only small if the strain from which the seeds are obtained is a good one. The lateness of the flowering season is a drawback to growing Marguerite Carnations outdoors, but if plants well studded with buds are lifted in the autumn without unduly disturbing the balls of soil, and placed in pots large enough for their reception, they will produce an abundance of bloom during the winter, as in the case of the plants at Luton Hoo.—G. H. H.

— **CONDITION OF THE SOIL.**—It is very interesting to find that almost everywhere, in spite of our having so far had a very rainy winter, the soil is in a good working condition. The recent spell of frost, and with it drying east wind, has done wonders in improving the surface, and would the dryness but endure for a week or two, it would be very possible to sow early hardy seeds under admirable conditions. Not that I encourage too early sowing of seeds, the resultant plants of which may suffer from later cold, but often when the ground is in a very favourable condition, sowings made early turn out better than later ones, made when perhaps the soil is too wet, and working and treading cause it to become clinging and hard. He is a wise gardener who makes the most of favourable opportunities, and in the winter these may not occur too often. I have taken stock of the country places, the roadsides and ditches in many directions just recently, and in spite of our having had such heavy rainfalls, have noticed how rapidly the water has passed away. That shows that the lower subsoils are yet far from being saturated. I have seen very diverse evidence of the rainfall in some previous walks, when water has been seen almost everywhere. Now it is only in the river or stream bottoms that there is any material evidence of its presence, and even then a dry day or two reduces these evidences greatly. During February we ought to have very much rain, yet if the soil's requirements are to be fully met, should we now have a dry spring, as surely there will be a cry for more rain very early in the summer.—CULTIVATOR.

— FRENCH BEAN, EMPEROR WILLIAM. — Having tried the above Bean for the first time last season, I can confidently say that we have in it a valuable addition to our list of French Beans, and one perfectly distinct in every way. It belongs to the white-seeded varieties, the somewhat irregular pods being conspicuous. The crop was immense, and was ready for use earlier than other varieties sown at the same time. The flavour was of the best, but the chief features seem to be its continuance in cropping, not quick to become stringy, and its admirable forcing properties. It is well worth a trial in every garden. — R. P. R.

— SCIODOPITYS VERTICILLATA. — In the interesting description of Hafodunos and its collection of Conifers (page 46), I note that special mention is made of the unusual cone-producing proclivity of this unique Japanese species, and I thought it would be additionally instructive to learn if there are other specimens in the United Kingdom exceeding it both in size and fruition. Probably, however, a specimen, which I believe is growing at Castlewella, co. Down, Ireland, may have by this time attained to similar dimensions, as some five or six years ago it was recorded as then being about 10 feet high. — W. G.

— MURRAM GRASS. — A very successful experiment has been made by the South Australian Government in the planting of Murram Grass on the sand hills at Normanville, which is the seaport of the large and fruitful district of Yankalilla. The Murram Grass, which was brought into requisition for the purpose of binding and consolidating the sand, is described as serving its purpose admirably. We notice, says "Indian Gardening," that an attempt was made last year to grow this Grass on the Government estate at Pooree, in Orissa, from roots received from Australia, but the roots were dry on receipt, and the experiment failed. Further action, we are told, is now being taken to try and grow this Grass from seed.

— COLEUS THYRSOIDEUS. — This is a new plant from British Central Africa, and from the way it has behaved, so far, it is likely to become a popular winter-flowering greenhouse plant in the near future. It differs from the garden Coleus by being of no service as a foliage plant. The leaves are more or less cordate, green, and deeply serrated. The flowers are bright blue, and produced in upright, terminal panicles from each branch. It should be grown cool all the summer, the same cultivation as that given to Salvias being suitable. Cuttings rooted in March make fine plants 2½ feet across in 8-inch pots for the following winter. The temperature of a warm greenhouse is necessary for flowering. It can be seen in flower in the Begonia house and Mexican house at Kew. — D.

— RENEWING OLD SEED. — Very interesting experiments are being conducted at the Amherst (Mass.) experiment station in bringing to more active life seeds which are too old to sprout well. Nothing has been published on the matter as yet, but the "American Agriculturist" has ascertained that old seeds have been treated with a 2 per cent. solution of asparagin, a vegetable extract obtained from German chemists, and the result has been to increase the germinating power greatly. Seed which before treatment showed only 50 per cent. of germination with one-half worthless, after treatment showed 98 per cent. of germination and only 2 per cent. which failed to sprout. Since asparagin at present costs 1 dol. 50c. per ounce, the method is not profitable for ordinary seeds. But seeds of new varieties and certain flower seeds which are actually quoted at more than their weight in gold might be treated in this way with profit. Experimenters are in hopes of finding a cheaper substance or a cheaper way of making this article for treating the seeds.

— BEGONIA HAAGEANA. — Among the shrubby species of Begonia this is certainly one of the best. It combines the merits of being decidedly ornamental, whether taken from a foliage or flowering point of view, has a first-rate constitution, and is easily managed. It was introduced from Brazil about a dozen years ago, and distributed by Messrs. Haage and Schmidt of Erfurt. If allowed freedom of growth it makes a dense bush 4 or 5 feet high, and 3 or more feet in diameter. The leaves vary from 6 to 12 inches in length. They are dark green above, reddish underneath, and thickly covered with hairs on both surfaces. The flowers are white with numerous red hairs about the lower half of the petals, and about 2 inches across. They are produced in large, drooping, cymose heads, often a foot across, and last in good condition for several weeks. It is rarely a large plant without flowers, but probably it is at its best in midwinter. It succeeds well either as a pot plant or planted in a border; in either case it will continue to grow and flower for several years without becoming lanky, a thing which many of the other species will not do. A house with a minimum temperature of from 48° to 50° is suitable for it. — W. D.

— HESSLE GARDENERS' SOCIETY. — At a meeting of the above Society, held in the Parish Schoolroom on January the 24th, Mr. F. Mason presiding, Mr. J. Stow, Hessele, read a paper entitled "Fruits and their Flavours." The essayist dealt with the different fruits which are used for essence making, describing the manner and the way the different essential oil and flavours are abstracted. The essay, which proved to be most instructive and interesting, was much enjoyed by the numerous members present, and there was a capital discussion. The usual vote of thanks was passed to the essayist and the Chairman. — J. T. B., Hessele.

— MEYENIAS. — What a pleasure it was to me to see that short but admirable note in your issue of last week on the beautiful though somewhat neglected Meyenias, and the capital illustration of what I consider one of the best varieties. I well remember it, as I think it was quite the first plant that I saw in flower when starting my gardening career, and I have a vivid recollection of the impression the handsome shades of purple and yellow of the flower made upon me, and how choice they looked dotted amongst other stove plants. Would that it was oftener seen now. The cultural details are so good as to make comment unnecessary. The dictionary says that it was introduced from West Africa in 1857. — R. P. R.

— EARLY CAULIFLOWERS. — Tender heads of Cauliflowers are always acceptable, and a sowing of a good early variety, such as Early Snowball, made in moderate heat in January or February, will give good results later on. The seeds must be dispersed thinly, and when the young plants commence to show themselves, remove the box to a light position close to the glass. When the young plants are large enough for removal, they should be pricked off into boxes of old potting soil, with which has been incorporated a little Mushroom bed-refuse. By the use of the manure the plants will lift with good balls, and after slowly hardening, they will be in good condition for removal to a warm border at the end of April or early in May. — V. T.

— LICHENS AND FUNGI. — I had the pleasure of enjoying the hospitality and a couple of hours' conversation a few days since, of the Rev. Mr. Dean, a namesake only, who is the Congregational minister at Gomshall, near Dorking, and resides at Abinger, where he acts as the local manager of the Technical Education Lectures, and is a member of the Parish Council, he is also a F.R.H.S. He further, having strong gardening instincts, superintends a number of small gardens worked by both boys and girls, receiving for this purpose the liberal support of Lord and Lady Farrer. Mr. Dean was in his young days a gardener, but preferred to enter the ministry. Living in a district peculiarly rich in native flora, he is a pretty good botanist, and has a wide knowledge of wild flowers. He was enabled to interest me immensely when at his house, by showing, with the aid of a powerful microscope, minute portions of moss, lichen, fungi, and other of Nature's small productions of the most wonderful and beautiful kind. Concerning these things, the gardeners' minister possesses very wide and interesting knowledge. — A. DEAN.

THE ORPHAN FUND SECRETARYSHIP.

It will be a sad misfortune for the orphans of gardeners should the coming election, on February 17th, lead to any such contest between gardeners and the trade as that indicated as possible in the *Journal of Horticulture* by "A. D.," page 72. It is hoped that the good sense and brotherly spirit of the Committee and all concerned, as well as the numerous and united support of true gardeners, will prevent this most useful Fund from suffering loss through rival interests or high-handed modes of electing a successor to Mr. Barron, who has managed the Orphan Fund so smoothly and successfully since its establishment.

The loss of the services of the present Secretary through ill health, if they must be lost, will create a crisis in the history of this useful Society, and it will be unworthy of the wisdom, gentleness, and courtesy of gardeners should this mode and form of election be allowed to create others. All of these difficulties might have been steered clear of for the present had my suggestion made in several of the gardening papers been adopted. These were in brief, that Mr. Barron's resignation be refused, and a holiday and assistance offered to enable him to resume and continue his distinguished and splendid services for our orphans, which all true gardeners, whether in the trade or not, have so highly appreciated.

It is a long cry from Edinburgh to London, and I fear I shall not be able to be there on February 17th; but could I be present I should exhaust the forms of procedure in endeavouring to keep our present Secretary, after a rest and with help if needful, before electing a new one. But should this, which seems far the best for our orphans and all concerned, prove impossible, then there is no doubt that the common sense and sound judgment of the subscribers present will proceed to elect the best man for the office without regard to sectional or personal interests. — D. T. FISH, 12, Fettes Row, Edinburgh.

SELAGINELLAS AND THEIR USES.

THE many beautiful species and varieties of these evergreen plants include some of the most diminutive forms of vegetation which are cultivated for ornamental purposes, and, like the animal forms of Nature's lilliputians, there are times when they prove of the utmost service. A house devoted entirely to Selaginellas might be made attractive at all times, as a varied collection would supply ample diversity of form and colour; but it is not, perhaps, when turned to account in this way that they would be the most useful in the majority of gardens, but rather when associated with other plants; in some instances for clothing the soil in which pot plants are growing, in others for forming an edging or groundwork to conservatory beds or borders, as well as in the infinite variety of ways in which the decorator can make good use of them.

Small Ferns, placed in china pots or other ornamental receptacles of various sizes, are now largely employed in house decoration. If these are given a groundwork of *Selaginella apoda* or *denticulata aurea* how pretty and finished they look!—tasty little ornaments worthy of finding a place in any boudoir or drawing-room. Tulips, Daffodils, Lily of the Valley, and Hyacinths are at the present time the principal flowers at command for dinner-table decoration. If these are arranged in shallow bowls, or on thick pieces of brown paper cut into any required shape, with *Lycopodium denticulatum* forming a groundwork, a few trails of *S. caesia* laid upon the cloth, and small specimens of *S. Martensi variegata* used as "dot" plants, a pretty and characteristic effect may be produced which would be hard to beat in the depth of winter. Dinner tables are made much handsomer than formerly, and where plants of Selaginellas are grown ample material could easily be obtained to cover the whole available surface of the table with them, the outline being fashioned in flowing curves, with mounds raised at suitable points surmounted by graceful foliaged plants. *Denticulata* would here again be the most suitable for forming the groundwork, and some of the upright growing variegated species could be introduced at irregular intervals; then if scarlet Tulips were arranged in masses and little groups, with chains and waving lines of the same flowers connecting the masses in some instances, in others forming broken lines between, we should form a pleasing picture of Tulips as seen in the wild garden springing from a carpet of the rich greenery of spring.

The above brief illustrations are simply intended to show a few of the many ways in which these lovely evergreen plants may be used with effect, and also with the object of perhaps stirring the imagination of some Journal readers sufficiently to cause them to set about the work of propagating a good stock of Selaginellas, as I know from experience that when decorations on a large scale are continually being carried out, one is often inclined to lament the fact that efforts were not previously made to work up a sufficient stock of such useful material. Those who are in such a dilemma at the present time cannot do better than begin propagating at once to secure immunity from similar inconvenience in the future.

Fortunately nearly all the Selaginellas are very easily propagated. When plenty of close frames are at command in the propagating house the cuttings may be rooted very quickly, but during the spring months such frames are generally required for the immense number of plants which do not succeed well unless kept close for a time. Having often been pressed for room of this description, I have been led to adopt another plan for raising Selaginellas which I find answers equally well, the only difference being that the cuttings do not root quite so quickly. In nearly all houses, especially if they are old, a comparatively shady corner can be found; this is just the place for the raising the plants under notice.

We have a Fern house, one end of which is somewhat darkened by a building at the back, and when a large number of Ferns has been potted, those placed in this position never, even in the summer, make such satisfactory progress as those in other parts of the house. I now devote this space entirely to Selaginellas, and find they succeed admirably. The cuttings are made in the ordinary way, from the creeping stems; these are inserted thickly in pots, almost half filled with drainage. Light sandy soil is used, with a little rough peat over the corks. After being arranged in the house on a stage with an ashed bottom a thorough watering is given, and daily syringing is practised. At this season no shading is given, but during the summer months sheets of paper are laid over the cuttings. With such treatment very satisfactory results are obtained, and a comparatively useless part of a house for other purposes turned to good account.

The following species and varieties include most of the best in commerce, and are all worth growing:—*albo-nitens*, dwarf trailing, leaves streaked with white; *argentea* (silvery) pretty, and useful for small pots; *atro-viridis*, rather erect in habit of growth, sometimes attains a height of 1 foot; *Brauni*, erect growing, stems 1 foot in length, of a soft yellow colour; *caesia*, beautiful for baskets, or for planting in pockets on the walls of a fernery, as the trailing shoots attain a considerable length, and are of a peculiar blue shade of colour;

conferta, dwarf, trailing; *denticulata*, and *d. variegata*, two well known gems, largely used for edgings, and covering the soil in which pot plants are growing; *plumosa*, *Griffithi*, *involuta variegata*, a beautiful tufted variety, with wiry-like drooping stems; *Lyalli*; *Martensi*, a well known greenhouse species, erect in habit of growth, and a good grower; the stems sometimes attain a height of 1 foot; the variegated form is exceedingly attractive for arranging in a fernery; *patula pilifera* *Vogeli*, a well known stove species, which produces stems from 1 to 2 feet in length, these are often tinted with pink. There is also a variegated form which is highly attractive, and *Wildenovi*. This is a useful stove climber, which is not often met with now, although it was a favourite some years ago. It requires plenty of syringing to keep it free from insects.—H. D.

A COMMON ERROR.

THERE can, I think, be no doubt that we have long pursued the practice of training many plants and trees grown in houses too close to the glass. We see it frequently in the case of Vines, Peaches, and Figs, with the result that the greatest difficulty is experienced in keeping red spider and other insects in check, when the general treatment is such that there ought to be no difficulty in the matter. The wonder is that we often succeed as well as we do, seeing how terribly high the temperature is just under the glass in very bright weather, and how rapidly it changes during cold nights.

Mr. W. Taylor showed us long ago the advantages of training Vines a few feet, instead of inches, from the glass, for the Vines on which he grew his marvellous Muscats at Longleat years ago were at the extremities of the rods 5 or 6 feet from the roof. Many good fruit growers, who at various times visited Longleat, saw the advantage of the plan, and modified their practice as far as circumstances allowed in houses already existing, and in others constructed under their directions fixed the trellises 18 inches or 2 feet from the glass, with improved results. It is, however, to be regretted that the practice is not more generally followed, because it is a great step toward making Grape growing easy, as keeping the leaves clear of red spider is yet one of the most troublesome matters connected with Grape culture.

Some may advance as an objection to the plan that where it is followed the houses must necessarily be built more lofty, but the front stages in vineries might often be made a little lower without inconvenience, and in vineries little used for plant growing the above objection would not apply. Another point to be considered is that the front of a lean-to or the sides of a span-roofed house are just the places where for convenience the trellis may be closer to the glass than under other parts of the roof, because the morning atmosphere as it becomes heated rises to the apex of a house. If, then, we fix our trellises 15 inches from the glass at the front, and allow from 2 to 3 feet at the top, we make a compromise which is satisfactory from every point of view. With Roses, again, we may often see the evil effects of training too close to the glass—persistent attacks of mildew and green aphid; young growth and flower buds pushing against the glass and being damaged, are all the evil results of the system. When Roses are trained to the roof of a conservatory or greenhouse there is generally plenty of head room to allow the trellis to be fixed 15 inches from the roof, and this distance would suffice.

There are, however, other instances in which such a space could not be allowed. As an example, let me give that of a house I have lately dealt with. This is a low span-roofed structure with Tea Roses planted in beds on each side and trained to the roof, the wires being fixed only 8 inches from it. Throughout last summer these Rose trees were a constant source of annoyance, as the shoots were continuously pressing against the glass. Many Rose buds were deformed in consequence, and the money spent in insecticides to keep the trees clean was double what it should have been. A few weeks ago this house was overhauled, the trees were pruned, borders dressed, and a new trellis fixed, not from the roof, but from the ground. Stakes were driven into the border 4 feet apart. Strong wires stretched the length of the house and fastened to them so as to form a convex surface, a foot from the glass at the sides of the house, and 4 or 5 feet from the apex. At intervals of 5 feet a strong shoot was taken from this trellis and fastened up to the roof, not with the object of training them any further, but in time to form, as it were, pillars on each side of the central walk. The trees so treated broke strongly, are now growing freely, and I look forward to securing far better results this season, with less trouble to boot.

By the time these notes appear in print many will perhaps be engaged in pruning and retying Roses in late houses, and in some instances may find it to their advantage to adopt the plan above outlined, or to modify it according to the circumstances of their own cases.—OBSERVER.

CAMELLIA SASANQUA.

THOUGH the flowers of this species are too fugitive to warrant it ever attaining anything like the popularity of *C. japonica*, it is still well worth a

the colour in the different varieties ranging from white to bright red, and the size from 2 to 4 inches across. Both the type and its varieties grow freely, and soon make good sized, well shaped bushes if treated in a similar manner to *C. japonica*. Most of the varieties are under



FIG. 17.—CAMELLIA SASANQUA.

place in the greenhouse, as its single or semi-double flowers are exceedingly pretty and produced in profusion when the plants are well grown. It is a Japanese plant of dwarf bushy habit. The leaves are oblong, 2 to 3 inches long and three-quarters of an inch wide. The flowers (fig. 17) are very variable, some plants having single, some semi-double flowers,

Japanese names—names which in Japan are no doubt highly esteemed, but in England strike terror into the gardener's heart, as, for instance, *C. S.* var. *Fukuzutsumi* and *Azumanishiki*. The type is figured in "Thunb. Fl. Japan," p. 273, t. 30, and a variety in the "Botanical Magazine," t. 2080.—W. D.



SEASONABLE NOTES.

In the "Rosarians' Year Book" Dr. Shackleton strongly advocates the use of standard Roses for suburban gardens, as tending to lift the Rose growth into a clearer atmosphere. There may be some force in this remark, but I am inclined to think the main benefit is derived from the plant being less liable to rain splashes and dirt. A Rose upon a standard or half-standard stem looks larger, and is decidedly showier than the same sized plant would appear when grown as a bush. For many years we have cultivated the weaker-growing Teas and Noisettes in this form, and also those with a tendency to drooping blossoms, such as *Souvenir d'un Ami*, *alba rosea*, and *aman Cochet*.

The short Briar stem, and those reaching to some 2½ feet, suit a most any Rose; but when taller stems are used it is well to have vigorous growers, and those producing long rods, that will be covered with blossoms throughout their length, and droop over in more or less weeping form. When grown in the centre of Rose beds, or singly upon the lawn, such standards are seen to advantage; but we must have strong, or at least very free growers. And if the greater longevity of dwarfs has lessened the proportion of standards that were formerly grown, few forms are showier when a judicious selection of varieties has been made; and much more depends upon this in the case of standards than with dwarfs.

We have a large death roll among standards because we are treating the stock itself in so unnatural a manner by constantly cutting away the suckers all Briars almost invariably throw as soon as established. With dwarfs we bud close upon the crown of the root, and few suckers result. In standards we leave the whole of the root free, and a large proportion of the stem. It is the nature of Briars to make vigorous and rather coarse roots, and to throw out suckers from time to time. If we curtail this we must provide a Rose of sufficient vigour to keep the roots active, and be able to draw the sap up the Briar stem.

If we work a weak-growing variety as a dwarf upon such vigorous stocks as the *De la Grifferaie*, we soon find it overpowered and rapidly deteriorating. No doubt this is caused by the great contrast between the constitution of Rose and stock. On the other hand, a naturally vigorous grower will give a very different result, as the stock and Rose are more at union in their requirements. Briars in a state of nature produce long, coarse roots, and often develop suckers throughout their whole length, and this in spite of the most careful trimming of roots. To avoid this it is a good plan to lift the plants every four or five years in order to cut such away more thoroughly. The lifting when done in season is decidedly beneficial rather than harmful, and we get more fibrous roots. We plant Briar stocks early in the autumn, and should do the same with standard Roses, for after all it is the Briar we are considering when transplanting.

Hybrid Perpetuals to be forced in pots should be pruned now and cut back harder than many practise. We only grow these under glass because of their deep and glowing colours. Other shades can be much better obtained from the Teas and a few Hybrid Teas. Of all H.P. Roses *Général Jacqueminot* is far away from the rest as a forcer. It is a freer bloomer than others, comes a good colour, has pointed buds, opens well, and is deliciously scented. All of the H.P.'s should be brought on very steadily until they show new growths of some inch or so in length, after which a gentle rise may be given until the flower buds are discernible, when they may be forced at will. But if we hurry and excite the sap in the wood too much before the roots are active the result is 2 inches or so of growth, and then a sudden check, which is generally fatal to many flowers.

Because the weather has been so mild, and a few Roses are pushing into growth in sheltered places, I note that several have begun pruning. But none of these was a Rose grower. It was invariably that most useful man who can do and understands everything pertaining to the garden. We all know him. By no means prune until the end of next month, let the weather be what it may. How many bushels of Roses are cut away each year late in the autumn when our friend the jobbing gardener is tidying up the villa garden for the winter months. Long growths of our showiest Roses are removed as useless because they did not flower during the past summer, and

are waving about in the way. They are really the most valuable wood of all, and will produce by far the best and greatest number of blossoms in the following year. It is such an easy matter to secure them until pruning time arrives, when, as a rule, with that class of Rose all we have to do is to thin out old wood to make room for the very shoots I have recently seen cut away so ruthlessly.

Turning once more to Roses under glass, I would say a few words about those in unheated houses. These are pushing into growth, and as the sun gains power will progress rapidly, unless we get a spell of cold weather; even then they are apt to be premature in growth, only to be caught by cold weather when some 3 inches or so long. Give as much ventilation as possible, and keep them backward until the early part of February. When they do start, the heat from sun and shelter from glass will bring them along apace—too fast, in fact, unless one is very careful to regulate by ventilation. This is the difficulty with Roses in unheated houses—one cannot be sure of a fairly uniform temperature. But much can be done in keeping the plants back until such time as the protection from glass will be sufficient to save from late frosts. Often have I flattered myself that the plants were carrying healthy and promising young growths, that were so far advanced as to be almost certain of a satisfactory crop; but a few dull days, and the inevitable damping when one is not able to use a little fire heat to counteract it, have been fatal. It is the same from cold, if we hurry our plants too much at first.—PRACTICE.

EARLY PEAS.

DRY, warm sheltered borders are to be found in some gardens very suitable for the production of early vegetables. If, in addition, the soil is rich, deep and fertile, or can be thoroughly well cultivated by double digging or trenching as well as liberal manuring, it will be in fine condition for sowing an early crop of Peas. A few rows of the round seeded first early kinds, such as *Sutton's Bountiful*, *William I.*, and *Dickson's First and Best*, may be sown at once. There are also early wrinkled seeded varieties, some of the best being *William Hurst*, *Chelsea Gem*, and *English Wonder*. All these are reliable dwarf varieties, which under favourable conditions give good returns by producing splendid crops of tender Peas.

Narrow sloping borders, well protected on every hand, but fully open to the sun, ought, if possible, to be chosen for these early crops. It is the cold cutting winds of spring which are the greatest enemies to the young Pea growth, hence the need of adequate shelter, which may be further enhanced by early furnishing the Peas with sticks. Early Peas may be sown somewhat thicker than varieties sown subsequently. Place the seeds in drills, 3 or 4 inches wide and 2 inches deep, drawn with a hoe. Cover the seed with fine soil, and then fill up the drills with the soil on each side. Three feet distance between the rows is a suitable distance for early crops, as all the varieties are of dwarf growth.

In addition to sowing outdoors, it is quite feasible to advance an early crop by sowing in boxes, pots, or on strips of turf under glass, but not under the influence of heat. Strips of turf may be laid grass side downwards in boxes, the ends or bottoms of which are movable. Wooden or zinc spouting answers well. Scoop out a space in the soil to receive the seed, not sowing too thickly, and cover with fine soil. Place in a frame or cool house where germination will be steady, consequently the young plants will advance sturdily. Plenty of air must be afforded them, and a position near the glass. If sown in pots, employ those 3½ or 4 inches in diameter, and stand them on a moist base. The turf used or the soil being thoroughly moist at the time of sowing, only a slight sprinkling of water will be necessary after the seed is covered.

The most important matter is to prevent them growing too quickly, whereby the plants become drawn. This can only be effected by a constant circulation of air about them, and giving them exposure to the outer atmosphere on favourable opportunities, hence the value and convenience of frames from which the lights can be drawn off. Previous to planting them out in the open, fully expose for some time, protecting from sudden frosts and rough winds.

Plant in shallow trenches, which afford a little protection from the winds, and furnish them with short branching stakes as support, giving the rows further shelter by affixing branches of evergreens on the windy side. The latter can be removed when the rows are fully established, and the weather is favourable for growth.

If dry warm weather sets in at the time of flowering, muleh down each side of the rows with light manure, and afford them water if necessary. When the pods begin to swell, diluted liquid manure will help the crop considerably.—E. D. S.

RAISING PEAS UNDER GLASS.

In perusing the columns of your valuable paper I have not seen a really practical plan given whereby those who wish to have early Peas with as little inconvenience as possible, and are obliged to sow indoors,

can do so. We read of first early Peas being sown in pots or on turves, and although I have not seen either method practised, I can vouch that the following plan gives satisfaction.

During the past ten years we have grown first early Peas in boxes 4 feet long, consisting of two 7-inch boards placed slantwise, having detachable grooved ends, thereby making the whole more substantial. In filling the boxes the soil is used fairly dry, and after sowing is firmed down well, a square-edged board being drawn along the surface of the box to give it a workman-like finish. The boxes are then placed in a cold vinery which is not started till the 1st of March. When the Peas are 3 or 4 inches above the soil the boxes are removed to a cold frame, ventilating, and drawing off the sashes as much as possible to keep the plants sturdy. The boxes are eventually set out in line in a sheltered position in the open.

In planting, a drill is made with the draw-hoe similar to the shape of the boxes, and while one man holds the box, another knocks off one of the detachable ends, and with a mason's trowel, or a long-bladed knife, relieves the roots, which will have got imbedded to the sides of the box, then shaking this, the whole mass slides into the drill; a little earth is drawn up to the plants and sticks inserted along the rows.

When the plants are well prepared and the work properly finished a novice would conclude that they had been sown in the position. Having proved this to be an easy, simple, and satisfactory plan of securing first early Peas, of which we grow Gradus and Exonian, I can recommend it to anyone wishing to give it a trial.—IOTA, *co. Antrim.*

[We readily publish the experience of our correspondents. The plan, however, of raising Peas in trough-shaped boxes is not quite new. We very well remember it being practised forty-five years ago, but in shorter and generally smaller boxes than those described and handy for one man to manage. Four years ago we published a method of raising early Peas as described by a correspondent, "W. S. E." As many persons tried the plan, some finding it good, others the reverse, we reproduce it (figs. 18, 19, 20), and point out that those who failed had done the joinery work too

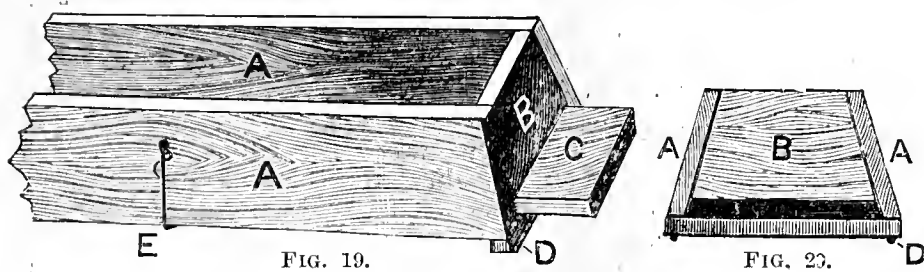


FIG. 19.

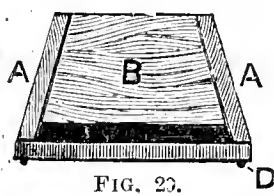


FIG. 20.

well. They did not make sufficient allowance for the swelling of the wood, and the bottom, instead of being easily withdrawn, was something like a fixture. With abundance of "play" allowed when the boxes are made, there is no difficulty whatever when the time arrives for transplanting.

"I enclose a sketch that I think will almost explain itself, and anyone thinking of making boxes would find much trouble saved in the operation of planting if they had them constructed as advised. It will be seen that the bottom is loose, and is simply slid in and rested on the two strips of iron or wood. To plant, a trench is made, a box is placed in the end, the bottom drawn out, and the box is lifted straight up. The bottom being wider than the top allows the mass of soil with the Peas to drop out and remain intact in the trench. All that then remains to be done is to draw the soil up to them on both sides; this is repeated to the end of the trench."

"A handy and useful size would be 2 feet long, 3 inches wide at the top, 4 inches at the bottom, and the same in depth, inside measure. The ends should be made of wood 1 inch or $\frac{3}{4}$ inch thick, and cut to the size named. The sides may be made of $\frac{1}{2}$ inch wood, and for the bottom $\frac{1}{2}$ or $\frac{3}{4}$ will be strong enough, and should answer without any additional support. The best support for the bottom would be irons $\frac{3}{4}$ inch wide, $\frac{1}{4}$ inch thick, and bent to shape with two or three holes for nails or screws, as shown in fig. 18. They would then go through the sides and into the thick wood of the ends. The bottom should be 2 or 3 inches longer than the sides to enable anyone to draw it out from either end, and it must be made to slip in very easily, as in watering the Peas the wood will swell and make it difficult to draw out. A handy man would soon make a number out of old packing cases, which are usually to be had on a gentleman's place, and if taken care of they would last several seasons.

"Fig. 19 shows a portion of the box at one end. A A are the sides of the box; B, the end; C, bottom partly drawn out; D, narrow strip of wood or iron, the same width as the thickness of wood in the end of the box, one of these at each end supports the bottom; E, shows how extra support may be given to the bottom, if required, by two nails and a piece of string. Fig. 20 shows the box endways."



THE N.C.S. AND THE CHAIRMAN'S RESIGNATION.

ON asking a member of the N.C.S. for the cause, so far as he knew it, of the announced resignation of Mr. T. W. Sanders, for the purpose of answering a question on the subject, we received the following reply:—

"Mr. Sanders resigned last year, but was persuaded to remain. This time I daresay he means it. His reasons were purely diplomatic—pressure of business, other engagements, and so forth. I hear his is not the only withdrawal. We are a merry family, we are! we are! we are! Perhaps we shall have an infusion of new blood some day."

The information, it will be conceded, is a trifle enigmatical, but the jaunty air of the member suggests that he intends to be happy whatever changes may occur. Perhaps he knows very little about them.

We have received another budget of complaints and grievances against the N.C.S., but they cannot be attended to this week.

MR. GODFREY AND THE N.C.S.

I AM perfectly willing to concede to Mr. Godfrey or to anyone else the fullest right to insert what they may prefer in their plant or seed catalogues; but the moment they send these lists out to the public the contents become so far public property that if referring to public matters they are amenable to public criticism. Any ordinary seed or plant list that is confined to its legitimate purpose, and does not include contentious matter of public interest, is quite outside the pale of criticism. Out of the numerous Chrysanthemum lists sent me from leading growers some have contentious matter in them, others have none. I prefer the latter.

My special reason for drawing attention to and deprecating these objectionable introductions into lists, was found in remarks made by two or three gardeners, who, utterly unconcerned as to the N.C.S., its sins or its virtues, complained of their unseemliness. I think it is probable, as a result of these strictures, that similar offences against good taste will not be extended.

As to the relative quarrels between the various traders and the N.C.S. I have no concern, but so long as the National Chrysanthemum Society holds that these traders cannot do without it (and traders practically admit it is so, because they continue to exhibit at the Society's shows) the latter have no right to complain if they do find themselves apparently scurvily treated. If, on the other hand, they are all fairly treated, why so much grumbling? We hear more of it in connection with the Chrysanthemum than with any other plant, flower, or fruit exhibited.

The Chrysanthemum is admittedly a most beautiful flower, and yet somehow it is productive of more quarrelling, grumbling, and grasping than is any other. We see nothing of this in the Rose, Dahlia, Carnation, and other plants, or in exhibitions generally. Is it because exhibiting Chrysanthemums is made, by both exhibitors and traders, primarily a money getting or making object? Anyone who can assist to purify the Chrysanthemum world of this unpleasant element certainly is doing useful work.

Let us see more of pure love for all that is beautiful in Chrysanthemums made more prominent at shows, and more of true love for them as home decorative flowers. No doubt the present system of demanding huge blooms at shows is largely responsible for so much of the selfish element in exhibiting. The more flowers are shown for the production of purely decorative effects, the less will the selfish element be evidenced.—A. D.

AWARDING PRIZES AT THE N.C.S. SHOWS.

IN the Editorial footnote, page 68, I note the paragraph, "We have received more complaints relative to the awarding of prizes at the N.C.S. Shows, than from exhibitors at all other shows in the kingdom." The italics are mine. I rather think a mistake has been made in the word "prizes," and that awards were probably meant to non-competitive exhibits. Considering the magnitude of the shows of the N.C.S., I consider grumbings at the awarding of the competitive prizes have during the last few years been exceptionally few; at least, they have not come within my knowledge, though this is perhaps not proof of the absence of such complaints.—A N.C.S. JUDGE.

[It certainly is not; nor does it follow that all complaints are well founded. There are prizes in the form of medals and other articles at shows, as well as of money, and judges "award" them, whatever they may be. The letters which we have received from time to time, and of which only portions of some of them have been published, have had reference mainly to other than the classes in which money

prizes were awarded, and our correspondent seems to carefully exclude them from the scope of his remarks. Had he expressed approval of all the exhibits and awards granted for them he would have weakened the force of the complaints, the existence of which he tacitly acknowledges. He knows better than we do whether there is justification or not for the "grumblings," as he is familiar with the precise terms of the schedules under which all the awards have been made, and we are not. Our correspondent seizes on what he conceives a questionable word, but evades the substance of the complaints, with which it is impossible he can be unfamiliar. We find no fault with him, as every man has a right to adopt any fair tactics for attaining the object he has in view. In this case he touches the fringe of the subject of exhibiting and "awards" tenderly; yet he is not by nature a particularly nervous man, though generally discreet.]

INCURVED VARIETIES.

IN my opinion the members of the Classification Committee of the N.C.S. are much to blame for the low standard of incurved blooms that are met with at the autumn shows at the present time. The inclusion of so many varieties that are of such doubtful quality as the list given on page 66 is a strong proof of what I say. Take, for example, one variety in each column—Madame Edmond Roger and The Egyptian—a long stretch of imagination would be required by any person to honestly say that either sort is even a fair representation of a typical Chinese blossom.

If the Committee fixes such a low standard what will happen to the incurved section in the near future? By maintaining a high standard of quality as a minimum we may expect improvement in the general quality, but when such sorts as I have named are permissible in a collection, how can we reasonably look for any improvement?

From the five dozen sorts named it will be safe to say that not more than two dozen at the outside (more likely one) will live long enough to become favourites. If this surmise prove to be correct the Committee will hardly feel flattered with the choice. Some of the varieties in the list are extremely "rough," owing, no doubt, to the Japanese blood infused into them as seedlings with a view to obtain enhanced colour. If the members of this Committee (I cannot believe they were unanimous) wish to see the sorts cultivated they have given the hall mark to, they should relegate them to the Japanese section, where they would quickly find their level—namely, the rubbish heap.—SADOC.

[It is pitiable to see so many mongrels passed into the incurved section.]

CHRYSANTHEMUM PROBLEMS.

(Concluded from page 14.)

IN attempting to divert Nature from her own manner of doing her own work to suit our requirements, we may instance an early blooming variety of Chrysanthemum showing a plump decided flower bud which, unfortunately, may be ten days too early. We start the plant on another instalment of growth, which has to be made during the naturally decreasing favourable conditions of growth attendant on our autumn climate; this is further aggravated by a spell of dull and cold weather. We have upset the balance of Nature; but there is not sufficient time for her to readjust it. For the new growth she is bound to use up wholly or partially the reserve store which was meant for the bloom alone. At the best it is divided between growth and the belated bloom, resulting in a compromise where neither bloom nor wood can be satisfactory. This phase of upsetting the balance between growth and blooming is well illustrated by stopping those varieties in March, April, and May, which otherwise cannot be obtained with any degree of success, proving that stopping of itself is in no way detrimental if sufficient time be allowed for the plant to readjust the balance.

Viewed by the light of the foregoing comments, although the later varieties require a longer period of sunshine to ripen that instalment of growth which is made from the time of stopping to the flower bud stage; but once the knowledge of the time required is gauged for each variety within reasonable limits success is more certainly achieved, because the complications are fewer.

In deciduous flowering and fruit trees, their yearly accretions of firm wood serve as a more permanent storehouse of the products of elaboration, and under good cultivation with the requisite water supply they can scarcely become over-ripe. But although the process leading up to the storage of those products is the same generally, in the Chrysanthemum the demand on them is made during the same season, because it blooms on the current year's growth, which naturally is not of a permanent character, being replaced by new sucker growth directly from the old stools. The plant can therefore only be regarded as a herbaceous one, a little more highly organised than the general run of that class of plants on account of its somewhat woody character. Viewed in this light we obtain the cue to one phase of over-ripening, which is more prevalent than ordinary observation leads us to understand. In herbaceous plants as the autumn approaches with maturing

and matured top growth we find a corresponding decrease of root action, both top and root practically going to rest. As a parallel to this, when we select an early blooming variety of Chrysanthemum, because under natural conditions it is capable of producing a fine bloom, we propagate it with the later varieties, which require a longer season to ripen. By high cultivation of the early variety we prolong its natural season of growth beyond its time, forcing from it several extra instalments, so that the bloom is carried forward to the exhibition season so long as the plant does not become too "ripe."

As bearing on this argument, another interesting phase of culture is where experience points to proving that some varieties produce better quality blooms on second crown buds, the prevailing opinion being that the bloom resultant from this bud is finer in quality, broader in the floret, and carries greater depth. Whilst allowing for the typical differences between crowns, second crowns, and terminals, we have also to concede that less wide variations occur in quality of second crown blooms as are to be found in other types. But where the best results accrue is when the combination of favourable circumstances takes place in regard to the proper degree of ripeness as discussed when referring to the early section—viz., not too ripe as to cripple root action, but in that condition when functional leaf activity is vigorous, and fully reciprocated by vigorous root action onwards till the bloom be fully developed. In reference to the question of the general superiority of the second crown bud on its own merits as such, we must not lose sight of the influence of climate on the development of the bloom. As a rule with those varieties grown on the second crown, if left to their natural course, the first crown would be too early and the second too late, so the chief object in stopping them is to secure the best-timed buds in the autumn, when climatic conditions are most favourable to alter development of bloom.

Having secured growth at the same time in its proper degree of ripeness typical September weather is no doubt the most favourable for bud development, which is represented by a moderate degree of atmospheric moisture, with plenty of sunshine by day, and cool enough at night to bring the atmosphere to saturation point, as exemplified by heavy dews in the morning. Unless these conditions obtain, even a difference of one week in obtaining the buds has an important effect on the quality of the bloom.

In the English Lake district the climate is considerably moister, even during summer, than other parts of the country, whilst the light is remarkably fine, and the temperature lower and more equable all through the summer. Typical September weather, as above described, is therefore a more certain quantity than elsewhere, yet I can vouch for the Japanese Chrysanthemums there grown from crown buds being equal to the best in size, quality, and colour grown elsewhere, whether on the first or second crown. It would obviously be rash to insist upon the general superiority of the second crown bud to the first, when all the conditions to development are as favourable to the latter as to the former.—T. G. W.

SOIL ANALYSES.

I CANNOT quite say of "H. H. R." (page 48) what someone has said of Mr. D. Thomson—namely, that he "always appears to say a great deal in a small space" (page 46). I said nothing whatever about the discussion on a paper read at the Drill Hall, for the sufficient reason that I knew nothing; but I did say on page 23 that your Forest Hill correspondent was an adept in taking ideas from books that he thinks favour his views, and ignoring precise statements which are condemnatory of his notions on soil analysis. This is absolutely the case; and notwithstanding his being, as he indicates, a life-long "learner," he only seems desirous of learning that which is in harmony with his own preconceived notions.

On this soil analysis fad—for fad it is as measured by his requirements—this "no chemist" places himself in direct conflict with a recognised scientific authority, for such Mr. Cousins must be to occupy his responsible position at Wye. Of what possible use could it be to "H. H. R." or anyone if I were to state the amount of lime discovered by analyses in samples of soil with which he has nothing whatever to do, and the particulars of which could afford him no guidance whatever in his dealings with different soils?

I could furnish details of a dozen analyses that I can truthfully say have been of no use to me, and I should be sorry to assume that any editor would publish them. I do not despise the aid of science by a very long way, and have been glad to benefit by it in the purchase of manures and in other ways, but the clamour for soil analyses, of which no two samples are alike out of many over the same area, and which, moreover, vary from different analysts, has no response from intelligent practical men. In my experience, for ordinary purposes of cultivation, digging a hole here, another there, and a third not far off, and so on up to a dozen, boxing the precious stuff, and sending it to some laboratory for the purpose of ascertaining what it will grow, is the merest fiddle-faddle, and a time-wasting process.

What any particular soil will grow depends on the cultivator who has it to handle, and who sees the natural vegetation, very much more than on any mystery man locked up in a room in some "foreign land" or elsewhere. As a cultivator I know this to be true, because I happen to have been much more bothered than helped by a gentleman with science on the brain, and who was really more than a "no chemist."

If a gardener who digs down, into the soil and examines it carefully, notes the trees, vegetables, flowers and weeds growing on it, and then cannot make the best of it, there are plenty of others who can. I fear "H. H. R." has no very good opinion of British gardeners, since all he has written goes to show how far they are behind, because they do not analyse the soil in the way he approves. Yet I venture to say that ninety-nine out of a hundred of all the best examples of cultivation he has seen have been produced in the absence of what he fancies to be necessary.

How any person who is "no chemist" can cite in support of his views an author who is a chemist, and this very author does not support, but confounds him in the extracts on page 24, and then passes these extracts—the proofs against himself—without an acknowledgment of their existence, is beyond my comprehension. If "H. H. R." is right Mr. Cousins is wrong on this question of soil analyses. That is the point at which we arrive, while the confessor of ignorance in chemistry complacently assumes that he, himself, is right. On one point he does not insist, namely, that an analysis for lime alone would be cheap at £6, but quietly drops £5 10s. This shows progress, even if that of the man in the boat—backwards.

One word more as a test of the practice of "H. H. R." Has he worked all the long years he implies in his own cultures on the basis of soil analysis? Has he sent what he demands from others—the results of analyses of his own soil to the editor? Of course he may have done so, and the figures have not been published. But has he? And with what results? Let me say that years ago I sent records of my experiences, so I am not asking of others what I have not done myself as—AN ENGLISH GARDENER.

TOMATO CULTURE.

(Continued from page 62.)

Sowing Seed.—Plants from seeds are superior to those from cuttings in produce. If the seed be sown during the first fortnight of January, and early varieties are selected, such as Early Dwarf Red and Early Ruby, with Comet and Mayflower, the plants being grown strongly and without check, ripe fruit may be had from them in April or early in May. Sow the seeds very thinly in well drained pots, pans, or shallow boxes, using light sandy soil. The soil should be rather firm to induce the seedlings to grow sturdily and push roots at the "neck." Cover lightly with fine soil. The practice commonly pursued is to plunge in bottom heat, cover with glass until the seeds have germinated, then transfer the pots to a shelf near the glass. If the heat is not great and the removal be gradual, no check will be given the seedlings.

There are, however, risks in it, and the better plan is to either have the plunging bed so near the glass that the seedlings cannot possibly "draw," or dispense with bottom heat altogether. The latter system means hard plants, blue-green in colour, and short stems; while the former implies yellowish foliage, a considerable up-growth, and a somewhat spindling stem. This can be obviated by keeping the top heat relatively low and letting every plant have all the light and air possible by judicious thinning of the seedlings, always withdrawing the leggy and weak and retaining the sturdy and most promising. In a Cucumber house with a night temperature of 60° to 65° day, 70° to 75° up to 90° with sun, Tomatoes can be raised very well on shelves fixed 1 foot from the glass. The bottom heat tends to weaken the plants and make them more susceptible to "sleepy disease" and eelworm. The Tomato appreciates a little air, a temperature of 55° to 60° at night, 65° by day, and 70° to 75° with gleams of sun.

When well into rough leaf, not more than a pair other than the seed leaves, place the plants in 3-inch pots, lightly drained, using soil warmed to the temperature of the house. If the plants are sturdy and are carefully potted they will hardly flinch. It is the lankiness (fig. 21, A) and the tenderness (a) that causes the seedlings to hang their heads after potting, while many such may have the stems crushed (b), which then decay and the plants are spoiled. Care must be taken to avoid that, placing a little of the roughest soil over the crocks, then a little finer, and enough to raise the seedling with its stem buried to the seed leaves in the soil, a quarter of an inch from the top of the pot. That space will be sufficient for holding water for the plant.

Observe what a difference there is between a drawn plant and a stout short-stemmed one (B c). For the first (C) the 3-inch pot is hardly deep enough, its radicle has to be bent on the rough compost,

and reliance placed on the emission of roots from a part of the plant containing little stored matter. It cannot be pressed; the soil so treated would crush its life out, therefore very light potting and a gentle tap down is all the weakling will bear. The stout-stemmed seedling (D) takes a lot of soil below its radicle or tap-root, and it has so many side roots as to practically come out of the seed pot, or pan or box, with a ball. It need not be sunk deeply to get it, with the seed leaves, just clear of the soil at the proper level, hence no weak stem in the soil to fall prey to vegetable or animal parasites, while it takes to the compost at once.

To get good plants it is better to prick off the seedlings when coming into rough leaf (E), like Cucumbers and Melons, and either pot them in "thumbs" or place round the sides of pots not less than an inch apart. I found that shifting checked the tendency to weakness, and the extra transplantation had a material effect in the matter

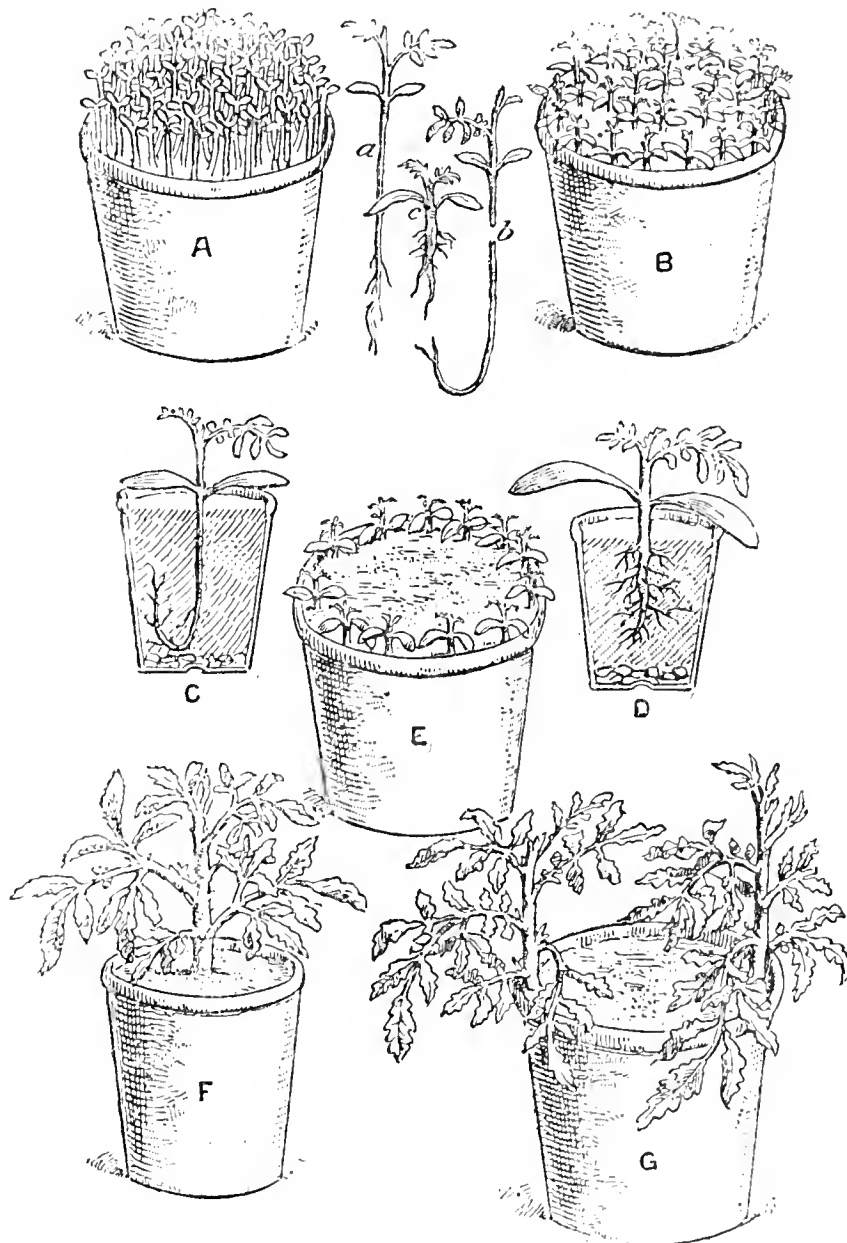


FIG. 21.—RAISING TOMATO PLANTS.

References.—A, thick sowing; a, drawn, spoiled seedling; b, crushed seedling. B, thin sowing; c, stout seedling. C, section of pot showing lanky plant potted off. D, section of pot containing sturdy seedling potted off. E, seedlings pricked around side of pot while in seed leaf. F, single plant shifted into 5-inch pot. G, pair of plants transferred to 6-inch pot.

of early fruitfulness. The plants cannot be too stiff, and the seedlings certainly root better at the sides than in the middle of pots, no matter what size.

Some growers pot the seedlings two in 5 or 6-inch pots, called the pair system, strong plants being selected. It may also be called the one-shift method, single plants being given 4-inch pots, out of which they go respectively into 10 or 12-inch pots for fruiting, or into either boxes or narrow beds. The newly potted plants should be kept somewhat close, and shaded from bright sunshine for a few days. The "miffy" plants will profit by a little bottom heat, and even extra warmth for a time; but they are not worth either; far better throw them away, and be a month later with sturdy healthy plants.

For these reasons I lay stress on the "hard as nails" plant, potted or pricked off early, and then transferred, before root-bound or grown too large, into 5-inch pots for singles (F), and 6-inch pots for pairs (G). In these keep them until the first blooms appear or show, then transfer to the fruiting quarters. If they are grown "hard," they will do this before they become root-bound or much weakened in growth, but by no means allow them to become stunted, but repot as required, whether from the small pots into large, or from these into the fruiting quarters. Some growers do not wait for the development of the first bloom, but shift

the plants and get them well established in the fruiting quarters before the first blooms are set.

That is the crux of raising Tomato plants from seed. Never over-water or allow the plants to become dry at the roots as to cause flagging. Room is another great point, for the plants will grow up if they cannot spread out laterally; therefore get stamina into the seedlings from the moment they appear above ground, and remember they want as much air and as much light to be able to bear fruit as the Potato does to produce mealy tubers.—G. ABBEY.

(To be continued.)

SOWING BROAD BEANS.

WHERE Broad Beans are in demand advantage should be taken of the earliest opportunity to make a sowing of Early Longpod or other variety of this class, as they are the hardiest and earliest in coming into bearing. Windsor Beans are not so early, but superior in quality, and may be sown as a main crop variety at the end of February or early in March.

Broad Beans require good, rich, substantial soil, but the situation for early sowings may be warm and sheltered. Where the soil is light in character deep culture and liberal manuring are highly appreciated by this crop, because the plants make strong growth, and are consequently gross feeding. Sow the Beans in double rows and 2 inches deep, the rows being 2 feet apart for the early, and 3 feet for the main crop. The two lines of the double row may be 8 or 9 inches apart.

After the seed commences to germinate and come through the soil the surface may be frequently hoed over in dry weather. This will promote the growth better than any other attention, inasmuch as it admits air and warmth into the soil while preventing the escape of moisture and keeping the ground clear of weeds. This will keep them growing well and bring them into flower as soon as desirable. When the flowers have set nip out the points of shoots, as it almost invariably happens that black fly attacks the plants if this is not done. Even if there should not be any fly the practice of stopping the tops is desirable, as it helps the pods to swell.—S.

NOTES ON FIGS.

AT wide intervals during the past year I have sent to the *Journal of Horticulture* brief seasonable notes on Fig culture under glass. This I propose doing again, as though houses of Figs are not found in every establishment their cultivation is sufficiently extensive to make the observations of value. Obviously general details cannot be afforded unless a series of articles be given, and those might not have the same value as concentrated hints.

EARLIEST TREES IN POTS.

The trees being now in full growth the points of the shoots must be pinched out when they have made about five leaves. A temperature of 55° to 60° at night, 65° by day, advancing to 70° with sun heat, closing early, and allowing an advance to 80° or 85, is suitable for the present. When the weather is dull afford a slight increase of heat in the early part of the day, so as to admit of a little ventilation, if only for an hour or two, to effect a change of atmosphere and induce sturdy growths. The bottom heat should be kept steady at 70° to 75°, introducing fresh sweetened leaves and litter as necessary. Syringe frequently to keep the trees free from red spider, and always sufficiently early to allow the foliage to become dry before night.

EARLY TREES IN BORDERS.

The trees started at the new year have commenced growth and the temperature slightly raised. A warmth of 55° will be suitable at night and 60° to 65° by day, with a rise to 70° or 75° from sun heat, and a free circulation of air, as a drawn and weakly growth cannot afterwards be rectified, and must be avoided by free ventilation on all favourable occasions, striving to secure a sturdy short-jointed wood from the commencement. Syringe the trees twice a day on fine days, but when dull morning syringing will be sufficient. The border will require copious supplies of tepid liquid manure, or watering through a mulch of manure in a lumpy state, so as to allow the roots to have the benefit of the air. Avoid, however, making the trees exuberant, as that is fatal to fruitfulness. In order to secure the free and certain swelling of the first crop of fruit keep the growths somewhat closely pinched, say at the fifth leaf, and rub off side growths not required to occupy vacant space or to form the so-called spurs.

SECOND EARLY BORDER TREES.

The house to afford fruit at the end of June or early in July may now be started. The trees will afford a second crop of fruit in September which will be very acceptable. If the trees have not had the old bare growths cut out, so as to leave the successional wood with its terminals for furnishing the first crop, and been dressed with an insecticide, these matters must have immediate attention. The border should be brought into a thoroughly moist state by repeated watering if necessary with tepid water, or where the borders are small and the trees large liquid manure may be supplied. Syringe the trees twice a day in bright weather, occasionally only when dull, but damp the floors and borders so as to secure a genial atmosphere. A temperature of 50° at night, and 55° by day artificially, is sufficient to commence with, advancing to 65° from sun heat, with a free circulation of air.—GROWER.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JANUARY 31ST, 1899.

THE display of flowers in the Drill Hall on Tuesday was very much more interesting than might have been expected. Orchids and Primulas were handsome, as were the Apples from Messrs. T. Rivers & Son. Each Committee had exhibits to attend to, but the Orchid was, perhaps, the busiest section.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. A. F. Barron, W. Poupart, A. Dean, J. W. Bates, F. Q. Lane, G. Reynolds, J. Willard, and the Rev. W. Wilks.

Messrs. T. Rivers & Son, Sawbridgeworth, staged an excellent exhibit of Apples and Oranges. The former were very fine indeed, and comprised splendid examples of Gloria Mundi, Gascoyne's Scarlet, Buckingham, King of Tompkins County, Belle Dubois Melon, Lord Derby, Bailey's Sweet, Wadhurst Pippin, Lewis' Incomparable, Emperor Alexander, and Bijou. The Oranges comprised well grown varieties of St. Michael's.

Mr. W. Roupell, Roupell Park, exhibited a basket of Apples, consisting of Newton Wonder, Smart's Prince Arthur, and Annie Elizabeth; the specimens were well preserved and presented an attractive appearance. Mr. Francis Calvers, Ludlow, exhibited a seedling Apple named "Collin Calvers," but the fruits were evidently past their best. The same exhibitor also staged a dish of Pear St. Julien.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. O. Thomas, H. B. May, R. Dean, W. Howe, C. Jeffries, J. Fraser (Kew), E. T. Cook, J. Hudson, J. Jennings, T. Peed, R. B. Lowe, C. E. Pearson, W. Bain, J. D. Pawle, R. W. Ker, J. Walker, C. E. Shea, J. W. Barr, H. J. Jones, H. J. Cutbush, C. Blick, and G. Paul.

Messrs. J. Hill & Son, Lower Edmonton, exhibited a choice collection of Ferns, comprising good specimens of *Gymnogramma calomelanos*, *Asplenium Colensoi*, *Davallia hirta cristata*, *Nephrolepis davallioides furcans*, and many others (silver Flora medal). Messrs. H. Cannell and Sons, Swanley, contributed a fine collection of Primulas. The plants were grown in 6-inch pots, with very healthy foliage and an abundance of bloom trusses. Cannell's Pink, White Perfection, Duchess of Fife, Beacon, Snowdrift, Mrs. R. W. Cannell, The Sirdar, Cannell's White, Red Rover, and Kentish Queen were the most noteworthy of the single forms, while the double forms were well represented by Princess of Wales, King of Purples, Marchioness of Exeter, Earl Beaconsfield and Annie Hillier; the plants of the latter were all beautifully flowered (silver Flora medal).

Messrs. Jas. Veitch & Sons, Chelsea, staged a box of hybrid Rhododendrons, comprising many beautiful forms. The trusses of Conqueror, Princess Beatrice, Ceres, Purity, Minerva, Brilliant, and the double form, balsaminæflorum album, were very attractive. Mr. R. Owen, Maidenhead, also contributed a capital display of Primulas. The plants were well grown and the flowers varied in colour, from white to pink, heliotrope, blue, red, crimson and purple, with many intermediate shades. The strain is undoubtedly a good one (bronze Flora medal).

Messrs. J. Laing & Sons, Forest Hill, staged a tasteful group of foliage and flowering plants. The Crotons were well coloured, while the Palms, Dracenas, and Ferns were enlightened with splendid plants of *Begonia Gloire de Lorraine*, *Cypripediums*, and Oranges in pots. Mr. F. Miller, 110, Fulham Road, South Kensington, exhibited an extensive display of floral decorations. The spring flowers employed consisted of *Acacia dealbata*, Snowdrops, Lily of the Valley, Tulips, Narcissi, *Spiræa*, white Lilac, common Primroses, and Freesias. The display did much to enhance the attractions of the hall (silver Banksian medal). Messrs. F. Sander & Co., St. Albans, exhibited excellent plants of *Acalypha hispida* (Sanderi), again demonstrating its value for winter-flowering. Good specimens of *Dracena Godseffiana* and *Sanderiana* were also staged, with plants of *Acalypha Godseffiana*, a variegated plant of much beauty.

Messrs. Collins Bros., Hampton-on-Thames, exhibited a number of Narcissi, comprising a good display of *N. telamonius plenus*, *N. spurius*, *N. poeticus ornatus*, and *N. princeps*. The blooms were displayed in vases, also in boxes, as packed for market. The bulbs were all grown at Hampton, and have certainly given good results (silver Banksian medal). Messrs. Barr & Sons, Covent Garden, staged a very pretty display of spring-flowering plants, comprising pots of *Narcissus minimus*, *Chionodoxa sardensis*, *Iris reticulata* var. *Histria*, and *Cyclamen ibericum rubrum*, *C. i. roseum*, *C. Atkinsi*, and *Veltheimia viridiflora*. Sir Trevor Lawrence, Bart., Dorking, exhibited some fine clumps of *Helleborus* Stephen Olbrich, and Frau Sophie Fröbel, both forms of a purplish rose colour; also a seedling of the same colour, heavily spotted with purple. From this source came a beautiful variety of *Lapageria rosea*, Knoll variety, a remarkably fine form, the flowers and foliage being quite distinct from the Nash Court form.

Messrs. T. Cripps & Son, Tunbridge Wells Nurseries, exhibited a group of *Rogeria cordata*. The plants ranged between 4 or 5 feet in height, and produced the flowers in numerous terminal trusses of pinkish colour. The foliage was bright green. Mr. H. Guyett, gardener to Mrs. Gabriel, Elmstead, Streatham, exhibited bunches of a *Rhododendron* gathered from the open air.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, H. M. Pollett, H. Ballantine, H. Little, J. Jacques, J. T. Gabriel, H. J. Chapman, W. H. Young, F. J. Thorne, E. Hill, C. Winn, T. W. Bond, E. Ashworth, J. Douglas, F. Mason, S. Courtauld, and de Barri Crawshaw.

Mr. G. Day, gardener to H. F. Simonds, Esq., Beekenhams, contributed a small group of well flowered Orchids. The several plants were all in splendid health and quite clean. There were *Odontoglossums*, *Dendrobium Jamesianum*, *Cœlogyne cristata*, *Lycaste Skinneri alba*, and one or two others (silver Banksian medal). F. Knight, Esq., Thundersley House, Thundersley, sent a number of varieties of *Cattleya Trianae*, including specimens rather over average merit (silver Banksian medal). Messrs. L. Linden & Co., Brussels, exhibited *Odontoglossums crispum sunambulum*, and *Andersonianum Sehusterianum*; *Cypripediums insigne Luciani*, and *Weirtzianum*; and *Cattleya Trianae M. Linden*. Mr. J. Douglas, Great Bookham, staged a small group of cut Orchids which were very bright and attractive (silver Banksian medal). De Barri Crawshay, Esq., Sevenoaks, sent *Lælia anceps Amesiana* Crawshay's var., and *Odontoglossum erispum Imperatrice*. Messrs. H. Low & Co., Bush Hill Park, showed *Cypripedium insigne Sanderæ*, while several other growers contributed small exhibits.

CERTIFICATES AND AWARDS OF MERIT.

Acalypha Godseffiana (F. Sander & Co.).—A dwarf growing plant of decorative value. The heart-shaped serrated leaves are green with a cream margin (award of merit).

Apple Lady Pilkington (Southport Botanic Gardens).—A handsomely formed pale yellow variety. It is flattish round, higher on one side than the other. The half-open eye is deeply set, and the short stalk is embedded in a deep cavity. There is a flush of red on the sun side (award of merit).

Cattleya Trianae Ernest Ashworth (H. Holbrook).—A superb variety. The very broad fringed petals and the sepals are pure white. The handsome lip is maroon on the front lobe fringed with white, the throat being soft yellow, and the side lobes delicate blush (award of merit).

Cattleya Trianae Memora Linden (L. Linden).—The fine sepals and petals of this variety are bright rose, and the lip rich dark velvety crimson (award of merit).

Cypripedium Miss Louisa Fowler (J. Davis).—This is a distinct form, of which the parentage was not definitely stated. The dorsal sepal is green, with dark chocolate spots and blotches. The petals are deep claret, with darker veins, and the pouch lively claret (award of merit).

Cypripedium Weirtzianum (L. Linden).—An imposing flower. The dorsal sepal is white with dark lines, and the petals are similar in colour, with lines and spots. The pouch is blackish crimson (award of merit).

Lælia anceps Amesiana Crawshay's variety (de Barri Crawshay).—A magnificent variety remarkably rich in colour. The sepals and petals are white at the base, shading through rose to velvety purple crimson at the tip. The lip is rich blackish crimson, and the throat pale yellow with crimson veins. The outer portion of the side lobes is rich crimson (first-class certificate).

Lapageria rosea The Knoll variety (W. Bain).—This is in all respects an improvement on the well-known type (award of merit).

Masdevallia Curlei (no name).—This is a hybrid from a cross between *M. macrura* and *M. tovarensis*. The prevailing colour is creamy white (award of merit).

EELWORMS (NEMATODES).

BULLETIN No. 55 of the Hatch Experiment Station, Massachusetts, gives the results of a very extensive study of these pests. The following is a brief résumé of the bulletin:—

Nematodes are small worms allied to the earth worm. Many are entirely harmless, and only one species (*Heterodera radicleola*) is known to damage plants in Massachusetts. Many of the harmless species can withstand the winter, but the one which is so harmful to florists' plants is destroyed by freezing. It may, however, easily survive in the centre of compost or manure heaps which frost does not reach. It therefore follows that if soil, manure, and compost heaps are spread out so that every part becomes frozen no danger need be feared, provided the benches are not themselves infested. It would seem that the careful cleaning and whitewashing of benches and the use of soil which has been frozen would eradicate the pest. Of course the first potting from the cutting bench should also be in the soil which had been frozen, as the planting of infested plants or the contact of infested soil with the other would soon cause the whole bench to be infested, as the worms breed rapidly.

Infested plants usually appear sickly and gradually fade away and die. The roots of such plants are more or less covered with various galls or swellings. These are abnormal growths of the roots due to the presence of the worms, which, when full-grown, are not much larger than the size of a pin head. The damage to the plant is not due to the feeding of the worms upon the roots, but to the fact that the flow of the sap is checked by the abnormal growth. A plant weakened by the attack of these worms is quite likely to become infested with other insect pests and fungus.

The use of chemicals is of no value, as the eggs practically cannot be killed by such means. The most effectual, complete, and practical method of exterminating nematodes in greenhouses is by heating the soil by means of steam. The amount of heat necessary to destroy them is 140°, which is much less than has been supposed. As, however, all parts of the soil are not heated equally, it is recommended that it be heated to about the boiling point of water (212°).—("American Florist.")

THE PEOPLE'S PALACE HORTICULTURAL SOCIETY.

THE district of Mile End scarcely seems to be one in which flower shows are held, because in a general way we do not associate flowers with the East of London. Time was—and not such a great number of years ago, either—when there were acres of green fields within an easy walk of the Bank, now covered with bricks and mortar. There were little nurseries in the Bethnal Green, Mile End, and Whitechapel Roads, and some forecourt gardens in which a small bed of Tulips could be seen, also of Anemones, Ranunculus, and Pansies. The rural aspects have all departed, and when anyone travelling Stratford way comes upon a piece of green it is hideous in its blasted condition. Tree and shrub, hedgerow and green grass, are disappearing before the fumes of chemical and other works which have been reared. There are acres of desolation in Haggerston, Bow, Bromley, Canning Town, and Plaistow which have been bereft of every scrap of natural beauty. An advancing army of industrial agencies, necessary and useful in their way, are seen at work despoiling the face of Nature, and making the existence of vegetable life almost impossible.

Nevertheless in Mile End there is a flourishing horticultural society having for its object the encouragement of the culture of plants in what are known as the congested districts of the East of London—Bethnal Green, Mile End, Whitechapel, Stepney, Limehouse, Poplar, and Spitalfields. The People's Palace in the Mile End Road (a realisation in part of that bright vision sketched by Sir Walter Besant in his "All Sorts and Conditions of Men.") was opened in 1887, and has grown into an enormous educational and social force in the district. But it was felt from the first that something else was necessary to introduce a little of sweetness and light into the homes of the workers who so largely constitute the dwellers. Two or three University men from Oxford House, Bethnal Green, who had leanings towards the new socialism which has stirred so many sympathetic hearts lent their aid, and a society was formed with its headquarters at the People's Palace. The Duke of Fife was made President, and the first season, 1894, was opened by an inaugural address from Mr. Richard Dean, V.M.H., the horticultural adviser to the Society, the Marquis of Lorne presiding.

After four years' operation the Society held a kind of congratulatory dinner at The Three Nuns, Aldgate, on the 26th ult., Mr. E. Flower, M.P., one of the Hon. Secretaries, in the chair. Mr. Harold Boulton, his colleague, a gentleman to whom very much of the success of the Society is due, filled the vice-chair. In proposing as the toast of the evening, "Success to the People's Palace Horticultural Society," the Chairman sketched the operations of the Society during the past five years. A commencement was made in 1894 by holding two exhibitions; the aggregate number of entries was 239, and the prize money awarded £43. In 1895 three exhibitions were attempted, a spring show being added to the summer and Chrysanthemum shows held in 1894; the entries ran up to 741, and the prize money amounted to £60. In 1896 the same number of shows were held, with a somewhat similar result. In 1897 a Dahlia Show was added, making four; the entries were 1085, and £75 awarded in prizes. Last year there was the same number of exhibitions; the entries increased to 1439, and the prize money awarded £100. Unfortunately, through lack of funds, there is danger of one of the shows—the Dahlias—will have to be abandoned, which is matter for great regret, as Dahlias were cultivated in many of the little back gardens with considerable success. The Society is self-supporting and self-governing, but as the subscription is low the income from that source is small, and it is supplemented by donations from ladies and gentlemen interested in the work of the Society. The Chairman, after alluding to the suitability of the fine Queen's Hall of the People's Palace as a place for shows, went on to say the membership was now 510 strong, yet they were only at the beginning of the work. As he believed a great future was mapped out for the Society, they had started a children's section as a distinct organisation with every prospect of success, and were interesting the teachers of voluntary and Board Schools in the work.

The health of the Judges, Messrs. R. Ballantine, R. Dean, and T. W. Sanders, who give their services gratuitously, was given, and in responding, both Mr. Ballantine and Mr. Sanders alluded to the improvement in the exhibits seen every season. They particularly alluded to the culture of Chrysanthemums in little home-constructed houses, stating they were surprised in November last to notice the remarkable advance made in the production of specimen blooms.

In responding to the toast of the Hon. Secretaries, Mr. Harold Boulton alluded to the fact that on a few occasions Royalty had honoured them by a visit, and how gratified they were with what they saw. Testimony was borne to the valuable services to the Society rendered by Mr. C. E. Osborn, the Secretary of the Society, who duly responded to the toast of his health. The proceedings, which were throughout of an animated and enjoyable character, was brought to a close by the singing of "Auld Lang Syne."

LONICERA FRAGRANTISSIMA.—This is by no means a showy plant at any time, but it is one of the earliest flowering shrubs we have, and is also remarkable for its fragrance, which is diffused to a considerable distance, and resembles the common Woodbine. The first flowers were open here on the 24th ult., and it usually gives a succession of bloom during the early part of the year. It appears to be perfectly hardy, although a native of China, but I find it advisable to plant it against a south wall in order to get the flowers as early as possible.—W. H. DIVERS, Belvoir Castle Gardens.

NOTES ON ALPINE FLOWERS.

SEMPERVIVUM LAGGERI.

THERE are many positions in which the Houseleeks are invaluable, and their worth is not properly appreciated by those who are imperfectly acquainted with the variety of appearance they present. There are, of course, many very much alike, but a large number are dissimilar. In hot dry positions they are quite at home, drought having apparently no power to destroy them. Should they look limp and shrivelled for a time, they soon recover. For wall or roof gardening they are exceedingly serviceable, and on perpendicular rockwork they look well in the crevices.

Among the Sempervivums few are as interesting as what are known as the Cobweb Houseleeks. They are so called because of the silk-like tomentum with which they are covered, and which, in dry weather, looks as if it had been woven by a spider. It is remarkably pretty, and well repays close inspection. The Houseleek now spoken of—*S. Laggeri*—is, botanically speaking, only a variety of *S. arachnoideum*; but, for simplicity sake, the usual abbreviated name of *S. Laggeri* is here used. It is larger in all its parts than the small-sized *S. arachnoideum*, and is consequently more effective. The rosettes in dry weather are quite as white as the Edelweiss, and the red flowers give an effective contrast. No compost suits the Houseleek better than a mixture of clay, cow manure, and lime rubbish. In wet districts the Cobweb Houseleeks sometimes decay if planted on the level. They will be found in such places to thrive better if planted on the face of a wall or rockwork, and fully exposed to the sun. The smallest modicum of soil to start with will suffice to establish a rosette or two, and will not require to be added to as the plant increases in size. A small hole made in the mortar of a wall and filled with the compost recommended, will afford a home for this desirable and interesting plant.

SAXIFRAGA SALOMONI.

A specialist in Saxifrages has his work cut out for him should he endeavour to unravel the mysteries of their nomenclature. Seedlings seem to set at defiance all our preconceived ideas regarding species, and give us room for doubt, to say nothing of a stronger word. Thus, though we are told that the pretty little Rockfoil under notice is a hybrid between *S. Rocheliana* and *S. Burseriana*, one would require to know more about the manner in which the cross was effected than is at present at our command before we can accept the statement. However this may be, this Saxifrage is an acquisition, and is worthy of wider growth than at present. The little rosettes are rather like those of *S. Burseriana*, but softer-looking and greener in colour. The flowers, which are white, have more substance than those of the greater number of the forms of *S. Burseriana*, and are almost intermediate in size between those of what we know as the type of that Rockfoil and those of *S. B. major*.

So far as his own garden is concerned, and in the few other places the writer has met with it, *S. Salomoni* does not appear to have the failing which so militates against the usefulness of *S. Burseriana*. This, as is pretty well known, is that it dies off from the centre when it attains a moderate size. *S. Salomoni* is not yet plentiful, but is offered for sale by some nurserymen. It is increased by division.

SAXIFRAGA CERATOPHYLLA.

Recognised as a variety of *S. trifurcata*, the Horn-leaved Rockfoil may be conveniently spoken of under its garden name. It is a plant which gives much pleasure in winter, when its leaves are of brightest green, as well as in early summer, when its large white flowers are upraised above the foliage.

According to the soil *S. ceratophylla* grows from about 3 to 8 or 9 inches high. It forms large tufts of deeply parted leaves, which look remarkably pretty. The flowers are very freely produced in panicles, and are of almost snowy whiteness. It comes from Spain, and may be propagated by division or seed. In moist weather a "branch" taken off with the old stem attached, and put an inch or two into the ground, roots readily. The Horn-leaved Rockfoil will thrive either in sun or shade, but—like a good many of the Saxifragas—is the better of being renewed occasionally by propagation. In some gardens it dies off in a manner not unlike *S. Burseriana*. This distinct large flowered and leaved Saxifrage should not be omitted from collections of Alpine flowers.

ERYTHRONIUM HARTWEGI.

The brief space available may suffice for a short notice of the earliest of the Dog's Tooth Violets—*Erythronium Hartwegi*. It is a native of North-West America, and comes into flower with us about February. Newly purchased roots may bloom earlier, but, when established, early in the month named is its usual time. There are more attractive Dog's Tooth Violets, but its creamy-white or yellow flowers and mottled leaves seldom fail to please. It ought to have a rather dry and sunny position. With a view to securing flowers of more substance and lasting longer in bloom, the writer experimented with it in a half-shaded position with disappointing results. *E. Hartwegi* may be obtained at a moderate price from those in the trade.—ALPINUS.

(To be continued.)

PRIMROSES IN JANUARY.—As showing the mildness of the weather during January and the preceding month, in the woods here Primroses are bursting into flower. On the 19th ult. I picked several fully expanded blossoms.—E. MOLYNEUX.

THE YOUNG GARDENERS' DOMAIN.

GLOXINIAS.

THESE useful and beautiful plants when well grown fully repay all necessary attention, and will be finely proportioned, carrying deep green foliage and abundance of flowers. The following treatment has answered well. Plants raised from seeds are the best, and sowing should commence early in January. The pans must be drained and filled with a compost of fibrous loam and leaf mould in equal parts, with a liberal sprinkling of sharp sand. Peat should not be used, or the surface may become covered with a green moss, which is fatal to the roots of seedlings. The pots, covered with glass, should be placed in a warm house, and immediately the seedlings are large enough to handle they ought to be transplanted into other receptacles, using the same compost as before. If care be exercised in the moving and the soil is in proper condition the roots soon take hold, and the seedlings thrive, and must eventually be potted singly in well drained 3-inch pots. After this stage is reached a good place for them is the shelf in a Cucumber house close to the glass, and they demand careful watering. If convenient allow them to remain in this position until they show flower, and then remove them to a close pit until the flowers open. The grower will find it an advantage to flower the plants the first year, as he will know what he is growing, and can discard worthless and inferior varieties.

After flowering the supply of water must be gradually lessened, not drying suddenly, as that is the time the tuber is perfecting itself for the following season. When thoroughly dried, which will be in the early autumn, they should be removed to a shelf where they do not receive water, but where atmospheric moisture is afforded, the main object being to keep the tubers plump. Early in January the potting must be done and a little stronger compost may be used—viz., two parts of fresh fibrous loam, one and a half of decayed cow manure, one part of leaf mould, with an addition of sharp sand, placing the tubers in the same sized pots they previously occupied. They should then be placed in brisk heat until they begin to break freely, when they will soon require a shift into 5 and 6-inch pots. Place them back for a few days, and afterwards transfer to an intermediate house, keeping well up to the light. As soon as they have filled these pots with roots, they will require one more shift into their blooming pots, using the same compost as previously advocated. By this simple mode of culture they grow luxuriantly, with foliage covering the pots, and flowers of size, substance, and colour.—INTERESTED.

THE FIG.

(Continued from page 73.)

TURNING to the permanent trees, if ripe fruit be desired during the early part of May, a start should be made at the commencement of the year, giving a temperature of 45° by night and 50° by day, with a rise of 5° at the end of ten days, and when at the latter temperature, syringe the trees at midday in bright weather, using tepid water—this will assist an even break. At the close of the first month the young growths will be coming, when a temperature of 55° by night and 60° by day should be given. Endeavour must be made to keep the atmosphere of the house a genial one, care being taken in air-giving, allowing the temperature to reach its maximum, then admitting a little by means of the top ventilator, closing the house sufficiently early to make the best possible use of sun heat.

About the middle of February the young fruit will be swelling, and a further rise of 5° should be allowed. As growth advances stopping must be resorted to, pinching the points of those shoots which have four or five good leaves, and these again breaking, will give the successional crops of fruit. The shoots will require tying down, but do not do this too tightly, but allow room for further development of the young wood. In carrying out this work try to get all leaves clear of the glass, or those touching it may be scorched on bright sunny days. Maintain a clean healthy growth, by careful but thorough syringings, both in the morning and at closing time, the latter being performed sufficiently early, that all may be dry ere night sets in. If syringing is not properly done, red spider soon makes its appearance, and will prove very detrimental to the tree.

When the fruit commences the second swelling, which, if grown as advised, should be about the middle of April, allow the night temperature to range about 70°, by day 80° or even 85°, before admitting air. Admit air gradually until the maximum is reached, as, if given thoughtlessly, a wholesale crippling of the young tender shoots may take place. I have heard and read of shading being used for Figs, but have had no personal experience in its use. I have seen our Figs stand the hottest summer sun without it, and they have not been injured in the slightest. Scorching of the leaves is, I believe, more the fault of careless ventilation than otherwise. During the growing season, never allow the border to approach dryness. It is really astonishing the amount which is taken up by healthy vigorous Figs during a season of growth. I do not mean give a little and often, this is bad practice, but apply sufficient at each watering, to thoroughly wet every particle of the soil, and from their restricted position this is soon appropriated by the roots.

As the Fig is a gross feeder the plants must have stimulants, and there are so many good special manures nowadays that it is difficult to advise one above another; at the same time the Fig will be found to relish feeding from the "old-fashioned" liquid farmyard manure. As ripeness approaches discontinue feeding until the first crop is gathered. More air may now be admitted, and syringings should cease for the time, keeping moisture about by frequently damping the walls and floor. If required for immediate use on the dinner table, allow the fruit to droop somewhat, gathering just as a drop of the juice is observed in the eye, but for travelling gather slightly before this stage. In packing Figs

use shallow boxes, lining with wadding or some soft material; wrap each fruit separately in either soft leaves or tissue paper, and over this either wadding or fine wood wool. Place a single layer in the box, and fill all crevices between the fruit with the same kind of material as used for wrapping, placing a layer of wadding over all.

The first crop over, encourage the successional ones by growing as previously advised. During the period of ripeness red spider may have made its appearance, in which case syringe heavily for a few days. Wasps and bluebottle flies may be found very troublesome in the autumn months, and means should be taken for their eradication, as if left unmolested a whole house of ripe fruit is soon totally ruined. As the autumn months advance gradually allow the trees to go to rest, after which preparations are made for another year's work.—SEMPER.



HARDY FRUIT GARDEN.

Apricots.—As these are the first trees to bloom in spring the necessary pruning, cleansing, and tying-in should be completed as early as possible. It is usual to detach all the younger wood from the wall early in December for the purpose of retarding the buds and to complete the ripening. The branches may now be unfastened, which will facilitate the operation of removing worn-out and useless wood. Apricots are much subject to losing branches by gumming and other causes. When affected in this way it is desirable that they be removed, thus giving an opportunity to re-arrange the whole trees, laying in, and disposing the wood to the best advantage.

Apricots bear both on spurs and young ripened shoots. Natural spurs are formed more freely on Apricots than on Peaches and Nectarines, while artificial spurs may be produced wherever desirable by shortening shoots that cannot easily and profitably be laid in. Having pruned out all superfluous wood, shorten the young shoots to either a triple bud or a wood bud. Dispose the main branches in position, afterwards the secondary branches, and finally the bearing wood, the latter about 4 inches between each shoot, which ought, as far as possible, to originate from the upper side of the branches. Well wash the walls and trees with an insecticide before re-arranging the branches. In painting the young shoots with the mixture due care must be taken to work the brush upwards so as not to dislocate the buds.

Peaches and Nectarines.—The pruning, cleansing, and re-arrangement of these should be dealt with next. The best fruit being borne on young wood, the aim in pruning must be to retain all the medium-sized, well-ripened shoots. Cut out weak and over-sappy shoots—the latter especially—starting from main branches. Partially worn-out branches ought to be removed, as well as weak wood wherever situated. It is seldom necessary or desirable to form artificial spurs on Peaches and Nectarines, though such will bear fruit readily. Thin out the young shoots to about 4 inches apart, retaining those of medium strength and well-ripened condition. Dress the walls, branches, and young wood with an insecticide, any of the numerous advertised compounds being effectual, though one formed of soft-soap and sulphur is excellent; 3 ozs. of soft-soap dissolved in a gallon of water, mixing a handful of sulphur into a paste and then adding to the above, will give a good insecticide. Some prefer to thicken it with clay, soot, and cow manure, applying it with a brush to the trees, but avoid injury to the buds on the young shoots by brushing upwards carefully.

In the final nailing-in of the young wood prune the shoots back to wood buds or triple buds, one of which is a wood bud. If pruned to flower buds only there will be no growth for drawing sap to the fruit. Superfluous growths which have to be dispensed with should be cut out entirely, or only sparingly retained to form spurs by shortening back. Secure all wood in a straight direction if this can be done readily.

Liquid Manure for Fruit Trees.—There is no better way of adding to the fertility of the soil in which large old fruit trees are growing, and which require assistance, than frequent applications of liquid manure from cesspools and tanks. The soil in most districts is now in a thoroughly moist condition, and liquid manure if applied will permeate down to the lowest roots, which will receive benefit as well as those in the upper stratum of soil. Liquid manure contains plant food in solution, and the value of rich material of this kind stored in the soil for the future use of the roots is exceedingly great. The liquid should be applied over the whole area of soil covered by the branches. It may be given freely to all trees which have previously borne good crops, and hence need assistance to sustain them for future effort.

Weakly growing trees will be stimulated by a copious soaking of liquid manure into making better growth, and plumping insufficiently fed fruit buds. Trees on grass suffer from exhaustion by reason of the grass largely abstracting food which is not replaced except by heavy manurial dressings either of liquid or solid material. The best manner of applying liquid manure on grass land is to make holes with a crowbar to a considerable depth, repeatedly filling them up with liquid until the soil is well saturated. When finished the holes may be filled in with manure and loam. In addition to filling the holes with liquid the latter may be poured freely on the surface.

Bush fruits, including Currants, Gooseberries, and Raspberries, much appreciate the rich fare contained in liquid manure, and it may be applied freely to well-established bushes, either previous to or after a mulching of manure. The fibrous roots of these small fruits appropriate large quantities of food, and it is profitable to treat them liberally when in a good fruiting condition.

Young trees when planted in well-prepared and rich soil grow freely enough, and should not have an application; but weakly bushes in poor soil would certainly be benefited.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest House.*—The trees started in December, and having set the fruit, should be syringed in the morning and afternoon of fine days to keep red spider in check, but an occasional syringing suffices in dull weather, damping the paths and borders instead of the trees, so as to maintain a genial atmosphere. Applications of liquid manure will assist the fruit in swelling, especially that on trees long subjected to forcing. Vigorous trees will not require any stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process. Proceed with the thinning of the fruit, removing a few fruits only at a time, those badly placed first. Follow up disbudding, leaving a growth at the base of each bearing branch or last year's wood and another at its extremity, or at a level with the fruit. The shoots retained for attracting the sap to the fruit should be stopped at the second or third leaf unless they are extensions, but the basal growths must be trained-in to take the place of those bearing fruit. Shoots upon extensions may be left at 12 to 15 inches distance apart to form the bearing shoots of the future. The night temperature may range from 55° to 60°, and 60° to 65° by day, with an advance to 70° or 75° from sun heat. It is better, however, to seek advancement from sun heat than to push the trees in sunless weather. Ventilate on all favourable occasions liberally, and avoid a close, stagnant atmosphere at all times, leaving a little air on constantly; but cold draughts are pernicious, and aridity favours insect pests.

Second Early House.—Trees started at the new year will be in blossom, and should have a temperature of 50°, 45° or even 40° on very cold nights, 50° to 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise above 65° without full ventilation. Lose no opportunity of admitting air, ventilating from 50°, avoiding, however, cold currents, and leave a little ventilation constantly at the top of the house. Damp the paths and other surfaces occasionally to secure a genial atmosphere, but avoid a close saturated one. Shake the trees on fine mornings to disperse the pollen, or brush the blossoms over lightly with a rabbit's tail mounted on a small stick, or apply the pollen to the stigma with a camel-hair brush.

Houses Started Early in February.—The trees to afford ripe fruit in July must now be started, they having commenced to swell their buds naturally. Syringe the trees occasionally until the blossom buds show colour, when it should be discontinued, but sprinkle the paths and borders once or twice a day to maintain a genial condition of the atmosphere, avoiding a close, stagnant one. If the flowers are very numerous thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder, enabling them to set better. Examine the trees closely, and if there be any aphides, fumigate with tobacco or vaporise with nicotine, so as to destroy them before the flowers expand. Maintain a temperature of 40° to 45° at night, and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat with free ventilation. On cold nights the temperature may fall to 45°, or even less, also 50° by day, allowing a little ventilation constantly at the top of the house.

Later Houses.—Admit air freely so as to retard the blossoming, especially in the case of unheated houses, which are liable to suffer from spring frosts. See that borders have water if needed. If the roof-lights have been removed they need not be replaced until the buds are advanced in swelling; they are quite safe for another month or more, or until the blossoms show colour.

Pines.—*Fruiting Plants and Starters.*—The specially prepared plants for early summer fruiting will now be throwing up fruit, and should have a mean temperature of 70°, varying it 5° according to the weather, admitting air at 80° with sunshine, but not lowering the temperature, allowing it to rise to 85°, closing between that and 80°, and if it rise somewhat after closing it will be an advantage rather than otherwise. When the suckers are large enough to handle, all except one to each plant must have the growth checked by taking out the centres.

Successional Plants.—To supplement the autumn-potted plants, select others which have been wintered in 7 or 8-inch pots, choosing the most vigorous. Those remaining may be reserved until the general spring potting, when they can be shaken out and treated similarly to suckers. For those now to be potted good fibrous loam, with the turf well reduced, placed under cover to become dried, is a suitable compost. Drain the pots well, dust soot or dry wood ashes over the crocks to exclude worms, and ram the soil firmly round the plants, keeping them well down in the pots to admit of copious supplies of water being given when necessary; 10-inch pots are suitable for Queens, and 11 or 12-inch for those of more robust growth. A temperature of 60° to 65° will be sufficient for these plants, also for those potted last autumn, and about 85° bottom heat. Plants in beds about to be started into fruit must not have the heat at the base of the pots over 90° or 95°, or their roots will be injured. If sufficient fruit be started to meet the requirements, later successional plants that have not been subjected to a high temperature may be advanced slowly, they with autumn-rooted suckers requiring careful watering, especially where the heat at the roots is supplied by fermenting materials.

THE BEE-KEEPER.

SKEP OVERTURNED—DRONES IN HIVE.

DURING the night of the 18th ult. I had a skep containing a swarm of 1898 overturned by the wind; the combs being severely fractured, the skep old and in bad condition. I got together four combs of stores and placed them into a frame hive. This and the skep containing the bees were taken into a warm room, and on my lifting the skep, which was placed close to the entrance of the frame hive, the bees entered the latter readily, including the queen. I then took the best piece of comb which had a little store at the top and tied it in a frame, and widening the four frames containing stores placed the empty one in the centre for the bees to cluster on. The hive was left all night in this warm room, and next morning all seemed well, so I put on plenty of warm covering and removed the hive to the same stand that the overturned skep occupied. As a novice, I should like to ask your bee correspondent if there is anything else that can be done; and as this skep was meant to have been transferred to a frame hive later on, would not it be preferable to do it now instead of waiting until spring, when much brood will have to be sacrificed? Of course, one would not always be in a position to supply four frames of sealed stores; but supposing we had them, and a comb of drawn foundation, and a warm room (65° to 70°) for operating, would not transferring now be more desirable? I may say that we lost from twelve to twenty bees during the operation, and neither myself nor man was protected, and we only received one sting each.

I should just like to ask one more question. On taking a frame from one of the well-stored hives I saw a drone, and on examining found several, also drone larvæ here and there, and as this hive had a young queen supplied last autumn what is wrong, and what is to be done? I take it that the hive is queenless, and has a working bee ovipositing, which is naturally a drone breeder. The stock in question is very strong in numbers, and had a young queen supplied in October.—NOVICE.

["Novice" is to be congratulated for the ready manner in which he overcame a somewhat difficult operation. Many apiarists, who do not consider themselves novices in bee management, would have hesitated before attempting to transfer bees from a straw skep to a frame hive at midwinter. Had the bees been left to take their chance in the skep in the case recorded above they would probably have succumbed before the spring, as the combs were broken down, which shows that it is sometimes an advantage to leave the beaten track and judge each case on its merits.

The only fault we have to find with "Novice" is that he did not go far enough. Instead of tying only "the best piece of comb into an empty frame," it would have been much more beneficial to the bees in the future if the whole of the combs had been transferred with the exception of that containing drone cells. It would then not have been necessary to disturb them again. All that is requisite is a few pieces of narrow tape or raffia. We prefer the former for winter, as it would probably have to remain tied round the combs for a couple of months, whereas if transferring is done in the summer or early autumn the ties may be removed within twenty-four hours. Have them of sufficient length to go round the bottom of the frame so that the ends are fastened at the top. Fill the frame with the best pieces of comb, taking care that the cells slope upwards the same as they did in their original position. With a little practice the combs may be placed firmly in the frames, so that they will require little attention from the bees, as they would be unable to fasten them securely at midwinter.

There would probably be sufficient combs in an ordinary skep to fill four frames. Were these placed in the middle of the hive, and the four frames of stores on each side, with plenty of warm coverings, as has already been done by "Novice," no further attention would have been necessary until the brood chamber required enlarging.

We do not recommend any interference with the bees at present, as the temperature is now lower than at any time during the winter. There will be ample stores in the hive for at least two months, as the bees will be able to cluster on the piece of comb inserted in the empty frame. If bees can possibly avoid it, they will not cluster on sealed stores, owing to the surface being so cold. It therefore shows the advantage of having some spare combs for an emergency like the above. The spare combs from the skep may be fastened into frames in readiness for future use, to be afterwards stored in a dry place. By working on this plan the brood will not be sacrificed, as suggested by your correspondent, as the frames may be placed in the hive when necessary in the spring.

Without a doubt the stock having drones and drone larvæ at this season will either be queenless, or the queen is injured and unable to fulfil her duties. At various times we have had several cases similar

to the above, principally with stocks having young queens introduced the previous autumn. More often than otherwise the queen has been dead, but we had one interesting exception a few years ago. Some drones were observed on the wing during early spring, and on examining the stock a fine queen was observed, but not any brood; they were fed with thin syrup for a fortnight, but this had not the desired effect, and after experimenting for several weeks the queen was destroyed, and the bees were united to the two stocks nearest to it on the stand. This is what we should advise "Novice" to do, as soon as the weather is warm enough.

Bees that have been queenless for some time will often ball the queen when united to another stock. It is therefore advisable to cage the queen for a few hours, and unite the bees in the usual manner, either by sprinkling them with flour, or by placing the combs alternately without disturbing the bees.—AN ENGLISH BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

Atlee, Burpee, & Co., Philadelphia.—*Seeds.*
 Dobie & Mason, Oak Street, Manchester.—*Seeds.*
 Collins Bros. & Gabriel, Waterloo Road, London.—*Seeds.*
 A. Cross & Sons, Ltd., Glasgow.—*Seeds.*
 T. Lambert & Söhne, Trier.—*Seeds.*
 H. Merryweather, Southwell.—*Seeds and Plants.*
 A. Robinson, 1A, Bishopsgate Street Without, London.—*Seeds.*
 J. Russell, Richmond, Surrey.—*Seeds.*
 B. Soddy, Walworth Road, London.—*Seeds.*
 W. Sydenham, Tamworth.—*Pansies and Violas.*
 Thyne & Paton, Union Street, Dundee.—*Seeds.*
 Vilmorin, Andrieux, & Co., Quai de la Mégisserie, Paris.—*Seeds.*
 Wright Bros., 31, Market Street, Mansfield.—*Seeds.*

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Ivy Leaves Eaten (J. C. B.).—The Ivy leaves appear eaten by some animal, and from the gnawing on the part of the larger leaf on the specimens, which has the veins left in part, we think by some larvæ, such as the night-feeding caterpillars, those of the "old lady" moth (*Mania maura*) feeding on Ivy, though the yellow underwing, dart, angle-shades, and other winter-feeding moths (by their larvæ) are sometimes not particular as to food plants. Whatever the enemy, we think it would yield to spraying the Ivy with Paris green paste, 1 oz. to 12 gallons of water, it sufficing to just coat the leafage with a thin film of the poison, applying when the foliage is perfectly dry. Of course, the Paris green will destroy or injure other animals partaking of the leaves, therefore judgment must be exercised, so as not to affect domesticated animals or those it may be desirable to protect from injury, such as rabbits, which are very fond of recently planted Ivy. The paraffin preparation named in answer to "Dorset" acts well as a deterrent, diluting to 3 gallons, and applying by means of a syringe. Perhaps you would find the marauders at work if you were to examine the Ivy after dark with a lantern, especially if caterpillars, though these may have passed into the pupa state, when they may be found in the ground in earthen cocoons, and an inch or two beneath the surface.

Black Currant Shoots with Big Buds (T. G.).—Your specimens represent a severe attack of the Black Currant bud mite (*Phytoptis ribis*). If the whole of the buds are in the same condition as those sent, there is nothing for it but to lift and burn every one of the bushes, and heavily lime the ground. Procure new stock from a perfectly reliable source, and plant as far away from the old plantation as you possibly can. Had you picked off the swollen buds when they were first noticed three years ago, the evil might have been mitigated.

Paraffin Emulsion for Mealy Bug on Vines (Dorset).—Softsoap, 5 ozs.; paraffin oil, one wineglassful, or 2 fluid ozs.; soft water, 1 quart. Dissolve the softsoap in the water by boiling, and, when dissolved, remove from the fire for safety, and add the paraffin at once, stirring briskly with a switch formed of twigs from an old birch broom until thoroughly amalgamated. For use, dilute with four parts of boiling or hot water, and apply with a brush at a temperature of 130° to 135°, reaching well into every angle, hole, and crevice. The preparation is best applied hot, but it answers when lukewarm, 90° to 100°, or even cold.

Material from Sewage Works (Chatham).—The article is that usually obtained by the precipitation of sewage, and in the ordinary cake form. Its value as manure is not great, certainly not more as a general rule than one-fourth that of well-decayed farmyard or stable manure, and some farmers do not rate it as high as that, while others consider it has considerable value for their crops. We have found it serviceable for general garden crops, especially where a course of manuring has been followed for some time, mainly consisting of stable or farmyard manure. It would be worth the price stated, and even more if the bulk is equal to the sample.

Manure from Horses Fed on Carrots for Mushrooms (E. B.).—The droppings are best from horses fed on upland hay and Oats only, the hunting stable horses affording the driest and best article; but unless the Carrots are used to such an extent as to cause the droppings to be soft and watery we have not found them materially to affect the production of Mushrooms, the precaution being taken to use the material a little more strawy, but short and well intermixed. Of course, the other description is the better, yet it is often a question of utilising material to hand rather than having it "cut and dried" for every purpose.

Temperature for Forcing Pit (Idem).—The plants—*Spiræas*, bulbs, and *Roses*—should be forwarded gently, commencing with a temperature of 45° to 50° at night, and the latter by day in severe weather, 55° in mild weather, advancing to 65° with sun, and some ventilation from 50° to 55°, and full at 65°. On fine days the temperature will rise much higher, but being from sun heat and the ventilation free, it will be an advantage rather than otherwise. Even with the temperatures quoted the bulbs must be kept well up to the glass or they will become drawn, and the other plants cannot have too much light to insure sturdy growth and development of the flower buds (now containing the flowers in embryo) into vigorous well-formed blooms. At this time of year we accord the plants the usual greenhouse temperature of 45° to 50° by artificial means, admit air at the latter, but not so as to lower the temperature. We maintain from 50° to 65° in the daytime, having the ventilation full at 65°, and from this point reducing it as the sun heat declines, closing for the day between 50° and 55°. The results are much better, though the time taken is longer, than by hard forcing, the plants being far more useful and lasting for decorative purposes.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (*Pomona*).—1, Yorkshire Greening; 2, Roundway Magnum Bonum; 3, Golden Noble; 4, Ribston Pippin; 5, Dumelow's Seedling. (*E. S.*).—1, Catillac; 2, Verulam; 3, London Pippin. (*R. P. W.*).—1, Scarlet Nonpareil; 2, Baxter's Pearmain; 3, Reinette de Caux; 4, Bess Pool; 5, Blenheim Pippin; 6, Golden Winter Pearmain. (*J. J. P.*).—1, Chaumontel; 2, Josephine de Malines; 3, Belmont.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than

six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. G.*).—1, *Catasetum citrinum*; 2, *Cœlogyne ocellata*. (*Fernale*).—*Asplenium fontanum*. (*P. F. H.*).—1, *Euonymus japonicus variegatus*; 2, *Escallonia rubra*; 3, *Acacia dealbata*; 4, *Polystichum angulare*; 5, *Asplenium flaccidum*. (*Evergreen*).—1, *Juniperus recurva*; 2, *Cedrus Libani*; 3, *C. deodara*; 4, *Thuia occidentalis*; 5, *Cupressus torulosa*; 6, *C. Lawsoniana*, varietal form. (*S. H. G.*)—1, *Curculigo recurva*; 2, undeterminable without flowers; 3, *Adiantum tenerum*.

COVENT GARDEN MARKET.—FEB. 1ST.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Cobs ...	30 0	40 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb. ...	1 2	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	9 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
" small, 100 ...	4 0	8 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	6 0	to 8 0	Lilac, bunch ...	3 6	to 5 0
Asparagus, Fern, bunch ...	2 0	2 6	Lily of the Valley, 12 sprays	0 6	1 3
Azalea, white, per doz. bnchs. ...	3 0	4 0	Marguerites, doz. bnchs.	4 0	5 0
Bouvardias, bunch ...	0 4	0 6	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Carnations, 12 blooms ...	1 6	2 0	Narcissus, doz. bnchs. ...	1 0	2 0
Chrysanthemums, per beh. specimen	0 6	2 0	Oreñids, var., doz. blooms	1 6	9 0
blooms, per doz. ...	1 6	to 2 0	Pelargoniums, doz. bnchs.	6 0	10 0
Daffodils, single yellow, beh. 12 blooms ...	1 0	0 0	Poinsettias, doz. blooms ...	4 0	6 0
Eucharis, doz. ...	2 0	3 0	Roses (indoor), doz. ...	2 0	3 0
Freesia, doz. bnchs. ...	2 0	4 0	" Red, doz. ...	6 0	8 0
Gardenias, doz. ...	2 0	3 0	" Tea, white, doz. ...	3 0	4 0
Geranium, scarlet, doz. bnchs. ...	6 0	8 0	" Yellow, doz. (Perles)	2 0	3 0
Hyacinths, Roman, bunch	0 6	0 8	" Safrano, doz. ...	1 0	1 6
Lilium lancifolium, white	3 0	4 0	" Pink, doz. ...	0 0	0 0
" longiflorum, 12 blooms	8 0	10 0	Smilax, bunch ...	2 6	3 0
			Tulips, bunch ...	1 0	1 6
			Violets ...	1 0	2 6
			" Parme, bunch ...	2 6	3 0



ADVANCE, IRELAND.

On the 19th of January of this year we wrote a paper on a perennial subject—*i.e.*, milk and butter. More has been said on our shortcomings with regard to these two articles than would fill many a large volume. We are told by our advisers to grow more milk and less corn, but we are not told how to do it—that is, to make it pay. We are of opinion that a good deal of milk-producing at present is not attended with gigantic profits. Our restrictions are many, and they appear to be increasing.

We are told to make better butter, and also more of it, though if we sell our milk we hardly know where that is to come in. We are told that if we make better butter we shall get better prices for it. How will the consumer like to give more? Would not an enhanced

price cause him to turn his attention to margarine, or some other substitute?

We heard it said years ago, when trade was better and the farmer prosperous, that butter at 1s. 6d. per pound left nothing for the farmer; we heard the same fact stated only the other day; and as butter during the last year has with us never reached 1s. 6d., we want to know what encouragement there is to make butter at all? We cannot do as isolated units. By that we mean it is not a bit of use for each individual farmer to make his own few pounds of butter, and expect to sell them at a profit, unless he lives quite near either some large and thickly populated centre, or can persuade the resident landowner or parson to take his produce at a fancy price, but this latter is not legitimate trade.

We spoke of "co-operation" as it is found in Ireland, but we had not much data to go upon. Since then a kind friend who has access to figures has furnished us with some useful particulars, which we gladly place before our readers. We must say, as some editors do, we are not responsible for the accuracy of these figures, nor do we altogether endorse all our friend says. The panacea for distressed Irish agriculture will not quite fit in for English ideas. The scheme in the main is good, and parts of it, like the curate's bad egg, are very good.

Ireland's distress was Mr. Horace Plunkett's opportunity. Being an Irishman and member for co. Dublin, also Irish Privy Councillor, he was made a Commissioner of the Congested Districts Board, and his attention was turned to find some method to relieve and permanently help the crippled industry. As early as 1889 he began to promote agricultural co-operation, and in 1894 he founded the Irish Agricultural Organisation Society. He thought this a better plan than hammering away at a scheme for lowered rents. And so it is, and under his management the project appears to have made a really excellent start, we were about to say, but that is hardly correct, as co-operation appears to have taken firm hold, and "goes" well.

These co-operative societies number 243, having a total membership of 27,322. Of these 136 are purely dairying, seventy-seven are agricultural, fifteen credit societies, and thirteen miscellaneous home industries and poultry societies, with two trade federations for the sale of produce and purchase of requirements.

Now, as to the cost of these co-operative dairies—£700. £1000 in £1 shares are issued. A farmer pays 10s. in cash, the other 10s. in milk. The milk is separated at once, the separated milk being returned to the supplier, and the rate of payment is per butter fat. It is said the farmers are receiving material pecuniary benefit, especially those who are shareholders as well as milk sellers. We fancy these farmers must be men in a very small way of business if they can only manage to take shares in the proportion of one per cow, and can only pay 10s. per share in cash.

There is one fact to which we take exception. Speaking of the creamery butter, "There is one especially instituted agency of one-third of these creameries that would effect sales of over £150,000 last year, and *therefore probably approaching half a million for the whole development so far attained.*" The italics are our own. No. This agency is doubtless the best. If the others are as good, why are their deeds passed over in silence? It does not in the least follow that the other two-thirds can make up the rest of the half million. The argument is founded on a false basis.

We thoroughly believe in associations for the purchase of manures and feeding stuffs, but these things have been done some time in England, though in perhaps a different way. We have been intimately acquainted for the last thirty-five years with the working of certain mills, registered as limited companies, the shares of which are almost entirely in the hands of farmers, and the management in their hands too. These mills were built for the sole purpose of supplying the owners with pure feeding stuffs and guaranteed manures.

This course was forced upon them by the trickery of traders, and they have no reason to regret the step they took. The shares certainly were more like £10 than 10s., and the dividends have run as high as

£10 per cent., we believe once they reached 16. Through fair weather and foul the average has been 6 per cent.; this is a good investment, to say nothing of the benefit derived from unadulterated cakes and tillages.

We know something, too, of the Credit Bank workings, as we have one established in our midst. We ask a trifle higher per-centage than these Irish banks. They are content with 5 per cent., we can readily get 6. We do think these banks ought to be more general; it only wants a setting about, and the thing is done. Our correspondent says—"It is stated that the saving by wholesale buying of manure, guaranteed and analysed, has been enormous." Well, if we make it ourselves, or even buy it as the Englishman does at so much per unit, we think the Irishman does not go one better.

WORK ON THE HOME FARM.

There is plenty of water about now, and where the land is not absolutely flooded it is not in a fit state for horses to walk on, much less to plough or work with any probable benefit. The possible exception is old lea not yet ploughed for spring corn. We have one such field, and the ploughing is finding occupation for the horses until, as we hope, drier conditions shall make other work possible.

Whatever the weather may prove, there is one job that must be done—muck must be removed from the yards. We have raised the cribs again and again, and the only next alternative is to lower the manure. Should not we rejoice in a week's frost?

Potatoes keep up the moderate level of price with which they opened the autumn campaign; 2s. 6d. per ton would cover the fluctuation of price. Large quantities have gone into consumption, especially of the higher qualities from the best districts, and there is a distinct ground for hope of a rise if frost were to step in to check the supplies of green vegetables.

Considering the much greater advantage to which offal Potatoes can be put in autumn, and the loss of weight and waste of the ware incidental to holding them over until spring, it is really almost surprising that growers can be found who will thus accommodate the consumers; but a rise of £2 or £3 per ton once in four or five years is sufficient to keep alive the speculative spirit, even in the matter-of-fact and cautious farmer. The Potato grower is now quite the speculator of the agricultural world, for the dead level of grain prices has long ago knocked out of it all hoarding-up of old Wheat.

Notwithstanding the open weather stock markets are very much depressed. The light Turnip crop is the only possible reason to account for this, but as young Clovers are a good plant there should be plenty of summer food, and the approach of spring will give graziers confidence to buy as soon as they can realise that winter is past. But is it past? Hardly; for there has been none. Is it still to come? Perhaps; but farmers generally will benefit most by its absence.

Springs are now ample, and we trust that water difficulties are settled.

OUR LETTER BOX.

Bacon Curing (T. H.).—You will find the information you require on this subject on page 430 of our issue of December 1st, 1898. This you may procure from the publisher, 12, Mitre Court Chambers, Fleet Street, London, for 3d., post free.

METEOROLOGICAL OBSERVATIONS.

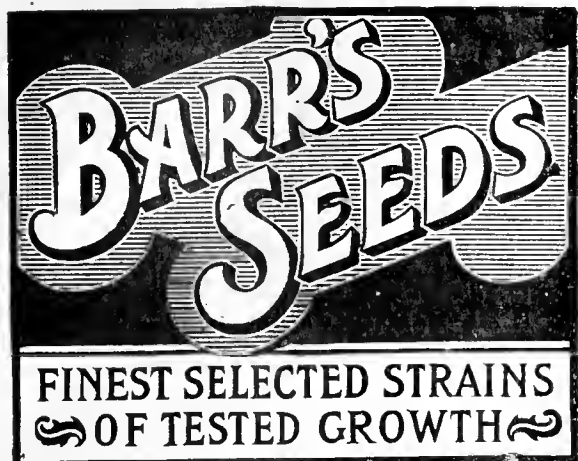
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. January.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.	
Sunday 22	29.418	50.5	45.8	W.	45.9	53.2	50.0	71.2	44.8	0.028	
Monday 23	29.736	42.2	41.2	W.	44.9	42.7	41.7	48.1	37.3	0.032	
Tuesday 24	30.380	35.4	34.4	N.	43.1	42.9	34.1	68.1	30.1	—	
Wednesday .. 25	30.643	30.8	29.1	N.E.	41.1	39.1	28.1	65.9	22.4	—	
Thursday .. 26	30.683	32.1	31.8	N.E.	39.3	41.9	30.1	71.2	24.1	—	
Friday 27	30.474	33.1	32.1	N.E.	38.2	42.4	31.9	69.8	24.2	—	
Saturday 28	30.322	31.9	31.7	N.E.	37.7	40.2	29.2	69.3	24.0	0.027	
	30.237	36.6	35.2		41.5	43.2	35.0	66.2	29.6	0.087	

REMARKS.

22nd.—Windy, with alternate cloud and sun; brilliant night.
 23rd.—Overcast and rainy till noon; fine and dry after, with a gleam of sun about 3 P.M.
 24th.—Fine and colder, with generally clear skies.
 25th.—Almost cloudless day and night.
 26th.—Almost unbroken sunshine by day, and bright night.
 27th.—Almost cloudless throughout.
 28th.—Bright almost all morning; occasional cloud after noon.
 A fine week with average temperature.—G. J. SYMONS.



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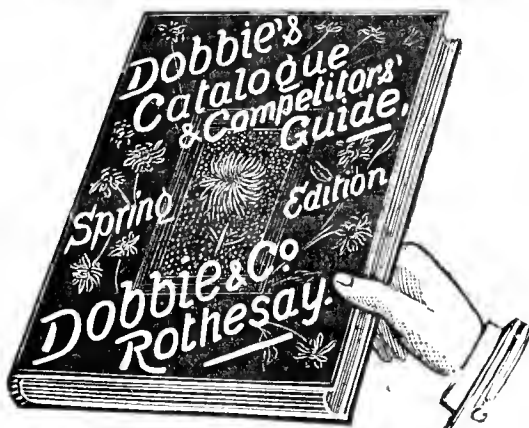
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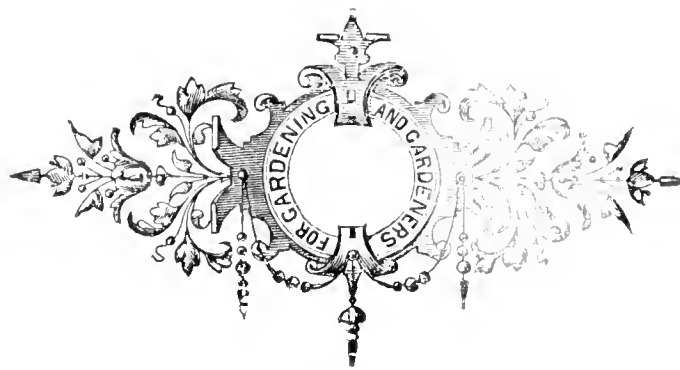
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Journal of Horticulture.

THURSDAY, FEBRUARY 9, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

YOUNG MEN'S DREAMS.

FROM time to time we receive letters from correspondents, of whose capacity and means we know nothing, in search of advice as to how they may succeed in gardening. The majority of these letters appear to come from young men who have passed from school to a year or two of studentship in some institution or other in which "horticulture is taught;" or have been pupils for a short term in an establishment in which fruit or other products are grown under glass for supplying the markets.

Generally the inquirers commence by stating, what is no doubt quite true, that they have a strong inclination to follow gardening as a means of livelihood, as it appeals to them as such a pleasant and interesting occupation; and as they have had a little experience, and have command of a small capital, they wish to know how to invest it, no doubt with a view to making a fortune in the course of a few years.

It is very rarely indeed that the actual extent of their "little" experience is narrated, and not once have we had an interpretation of what is meant by a "small" capital. It is conceivable that there are gardeners who, if in possession of a couple of hundred pounds, would not consider the amount particularly "small" to start with, while there are students and pupils who would regard five times that amount as a very small "dot" indeed. In the absence of anything approaching precise knowledge on those essential points, and of credentials as to natural aptitude for the work in which they desire to engage, devotion to duty and habits of industry, we can only give a brief line of advice in the stamped directed envelopes, which are usually enclosed for replies.

Than being helpful to persons who are earnestly desirous of obtaining proficiency in the craft, we have no greater pleasure; but we have to be honest, and this compels us to say that the greatest kindness we could do to some aspirants, who have made a start in gardening, would be to help them out of it. On the other hand, it is especially gratifying to see men now thriving, who in their

probationary days entered with heartiness into whatever work was set them to do, who did not shrink from the drudgery of labour, and who went perseveringly on step by step through section after section; who lost no opportunity of acquiring knowledge—theoretical and practical—to equip themselves for the contest with men of strength, and each year getting stronger and more numerous, for industrial supremacy.

These are the young men who win—men who concentrate their studies on these particular subjects that are the most likely to be of service to them, and then apply the knowledge obtained sedulously and untiringly—or, in other words, educate themselves to become both clear, sound thinkers, and skilled workers. They then not only know what should be done, but who can show the way to do it in the best manner. Men who have for a time to rely on their own mental and physical activities are just the men to make the greatest headway; and they are also the most capable of extracting the best services from others whom they may eventually have to control.

An episode once recorded in the *Journal of Horticulture* by a fine old gardener, Robert Fish, will enforce this point. Hearing what he called a “pretty quarrel” between a mistress and her maidservant, the latter, stung into casting what she thought a withering reproach, declared, “I took you for a lady; if I had known you had previously been a servant I would never have served you, that I wouldn’t.” Probably the mistress knew too much, and possibly may have expected too much; but be this as it may, a gardener cannot know too much practically as well as scientifically, but especially practically, for achieving the greatest success in either a private or a commercial establishment.

For obtaining a rich store of knowledge of the right kind is a question of diligence, and not that alone, but also of time. It cannot be purchased by sending young people for a year or two of studentship at an institution or in a garden or nursery. At the best, and the teaching may be good, such a course of instruction can only be regarded as preparatory, and much further experience is requisite before a man (or woman) can become in any sense a creditable gardener, while as to starting such fledglings in business, it would in nine cases out of ten amount to throwing away money.

So far as regards the supply of private gardeners, we suspect it will, under what may be termed natural conditions of increase, always exceed the demand; and we are convinced that the best course of training for well educated, studious, and prudent young men is to be found in the well-equipped and ably managed gardens that are happily found over the length and breadth of the land. As to the training of others who are fascinated by the charms of gardening, but have not been “brought up” to the calling: Some may be expected to succeed, and a few may even establish lucrative businesses, but it is practically impossible that anything like all can be winners in this lottery of life, and we very much fear that bitter disappointment will be the lot of many.

The gardening of the future appears to float before the vision of those who see it, or think they see it, as a golden dream, and that they have only to make their desire known to find a happy position within, to them, the charmed domain. Little do they know of the actual facts—of numbers of well trained young men seeking in vain for positions which they are competent to fill; and of men no longer young—men of character and ability, groaning under 12s. or 15s. a week, in nurseries, waiting for appointments month after month, and waiting in vain.

As an example of the feeling which seems to exist that gardeners are scarce, and that a highly respectable and worthy young man has only to hold up his hand to have his services competed for, a few remarks from one of many similar letters may be cited as follows:—

“I should be glad of your advice on ‘fruit growing under glass’ and gardening on a private estate, such as is carried on at Petworth Park and such places. I have been a pupil in a market nursery for eighteen months, and, I think, have a fairly good knowledge of a market nursery to be obtained in so short a time; but I have been advised by two or three people to give up the idea of this business branch and take up the other I mention. I should be glad if you could tell me what you think of fruit growing for market. I should have, when ready to start, very little capital, and think that this is a great thing in fruit growing. With regard to private gardens, I have been trying to obtain a start for the past year, but without success. I have been advertising lately, but only had one reply in a fortnight, which was no good. I feel sure that I am not going the right way to work, and should be glad if you could tell me if I am advertising in the proper paper, or give me any other advice.”

The writer of the above letter may be a man of energy, and he evidently has confidence in himself to think that “very little capital is a great thing” in starting in the business of fruit growing. From one point of view it suggests a possible advantage—namely, in there not being very much to lose. What we should think very much better would be at least thrice the amount of experience, and letting the capital grow till half of it would suffice for a start, leaving the remainder for extension if the beginning proved satisfactory.

What could be said in reply to such a letter than that in the absence of friendly influence for gaining a start in a private garden, the chances of its writer attaining his object were extremely remote; that young men with years of training would naturally be preferred for filling vacancies in gardens; that “Petworth Park and such places” were only filled by men of wide experience and strong recommendations; that he has not had half enough experience in even one section to master it; and that inclination, however strong—even amounting to devotion, *plus* enthusiasm—cannot compensate for lack of experience.

These are our convictions, and in the interests of dreamers, as well as in those of experienced men, we do not hesitate to make these convictions widely known. To think, as some excellently disposed people appear to think, that by payment of a fee, no matter of what amount, good men worthy of the name of gardener can be sent into the world after eighteen months’ or two years’ tuition is, in our opinion, one of the greatest fallacies of modern times.

PEACHES AND NECTARINES.

THE Peach, we are told, originated in Persia, but I am not going to dwell on that, for we all know it does well in this country with the protection of a wall. In outdoor culture aspect is the first consideration. A good south wall is the best, if available; if not, a west, or even east, if not in too elevated position, where the trees would catch the cold winds which are so disastrous in early spring.

The position being decided on, the borders must be prepared, and it all depends on the state of the land as to what should be done, as if wet and heavy the border must be drained. This will entail a fair amount of labour, and should be in no way neglected. If room can be spared the border ought not to be less than 8 feet wide. All the soil should be taken out to about 3 feet deep, and a layer of drainage put in, consisting of clinkers and brickbats, having previously sloped the bottom outwards about an inch to the foot. This, with the aid of a drain under the wall, will answer very well. If, on the other hand, the subsoil is dry and sandy, this will have to be removed and replaced by suitable soil; but should the border contain good soil, a trenching will be all that is required, mixing in a fair amount of lime rubbish and charcoal to keep the border sweet, with an addition of wood ashes.

Having taken the soil out it must be substituted by something better. The best staple is sound turfy loam, but I am afraid expense has to be spared sometimes, so that it would be difficult to lay down a hard and fast rule. I should say, therefore, the soil must approach the loam as near as possible, mixing with it such ingredients as I have previously mentioned; but on no account must animal manure be used, for if the soil is in any way good it will help to produce rank growth, which is difficult to control. The trees can always be helped by top-dressing.

In planting, the trees should be at least 15 feet apart, but give 20 feet if space can be spared. I think it a good plan to afford a fair amount of room, for crowding means hard cutting, which Peaches do not appreciate. It is often the practice when planting fan-trained trees (which are the most popular form) to supplement with standards, as it helps to fill the vacant space until the others get up, when the “riders” are, of course, removed to give place to the permanent ones. The end of October or beginning of November is the best time for planting.

The best trees for planting, in my opinion, are two-year-old from maidens, unless quicker returns are wanted, then of course other trees must be utilised. Care must be taken to plant about 6 inches from the wall, and not deeper than the tree has been previously growing. There is no doubt that with proper planting the trees will start with healthy growth as soon as the spring arrives.

It is not desirable to lay down any rule with regard to training, but the branches must be kept well down on each side to keep the middle open, as if this is not done strong central growths will be produced. It is very well to state a systematic way of training, but more often than not the grower cannot get the buds to break just where he wants them, and so has to shape the tree as best he can; not that I am going to speak against systematic training, for I think it is a great help, especially to beginners. Care should be taken not to overcrowd the trees, for weak and unripened wood is of little use.

Heeling in the young shoots should not be neglected as soon as they are about 6 inches long. It keeps them at the proper angle, and

greatly helps to improve the shape of the tree. Another thing that should be well looked after is the tying in of young shoots, especially in young trees. If tied too tightly the bark is often found cut through, which will cause an ugly wound, or perhaps the loss of a branch. Mulching with some good straw manure will aid the trees in making and keeping surface roots.

I will now name a few sorts for maintaining a successional supply against the wall outdoors. It is impossible to give the exact time a certain sort will ripen, for that depends on the situation, but I will give them as near as I can for the average situation.

Peaches.—Alexandra, Early Beatrice, Waterloo, and Early Rivers for the middle of July; Condor and Hale's Early for the first week in August; Rivers' Early York, Crimson Galande, and Dr. Hogg for the middle of August; Bellegarde, Dymond, and Alexander Noblesse for the first week of September; Royal George second week in September; Princess of Wales latter end of September; Sea Eagle and Golden Eagle for October.

Nectarines.—Early Rivers and Lord Napier for the middle of July; Hardwicke Seedling, Stanwick Elruge, and Rivers' Orange for the month of August; Pineapple and Violette Hâtive for September; and Victoria for October. Those mentioned are no doubt some of the best that can be grown both for outdoor and under glass culture, either in private or market places.

I will now run through the general routine of the work amongst trees in their fruiting stage.

If the tree has been well looked after in the growing season there should not be much pruning required, except the shortening of a few of the long bearing shoots and removing surplus growth. This ought to be done as soon as convenient after the leaves fall. One thing must be well attended to when cutting back—that is, to cut to a wood bud, which, to an experienced eye, is easy to detect, the latter mostly appearing singly or between two flower buds. The wood bud is more pointed than the fruit bud.

After pruning some like to paint the trees; but I am no advocate of this except to eradicate scale. It is an old custom, and some growers think it a mistake to omit it. I have under my care about 200 trees, and some of these have never been painted, and I find on the whole they keep quite as clean as regards insect or disease as those that have been dressed. When the pruning is done tie or nail the shoots neatly back in their places, and lightly point over the surface of the border after having spread on a little chemical manure or wood ashes and some new soil, as these will do much to encourage surface rooting.

The next thing to be considered is the protection of the blossoms from frost and cold winds. Where there is no glass coping this can be done by hanging bunting over the trees at night. If favourable weather prevail a good set is often obtained without much trouble as regards fertilisation; but it is perhaps preferable to brush over the flowers of shy setters, a rabbit's tail tied to a stick being very useful for the purpose. When bees are not plentiful the more prolific bearers should be gently shaken about midday.

The young growths will then require the attention practically called disbudding, which should be done at two or three different times. First of all the back and breast wood must be attended to, and afterwards great care ought to be taken, for this is the stage when the bearing wood for the next season must be chosen. For this I like to reserve a good shoot, as far back into the previous year's wood as possible. This will keep the tree well in hand, and prevent the appearance of long naked branches. When the fruits are set it is advisable to stop all shoots to about four leaves until the fruit-thinning is done, when all that are not wanted may be removed.—(Paper read by MR. S. H. SNELL, Torquay Fruit Farm, at a meeting of the Torquay Gardeners' Society.)

(To be concluded.)

A FACT ABOUT TOMATOES,

Most of us know how thoroughly bad is the practice of planting the majority of plants, trees, and shrubs too deeply. The evil effects of such a practice have been repeatedly pointed out in the horticultural press, and many a man has read such timely warnings soon enough to save his trees from disaster. Exceptions, however, occur to well nigh any established rule. Tomatoes form a notable one among softwooded plants, and it is fortunate that such is the case.

When seed is sown during the autumn, with the object of getting a crop as early as possible, the young plants frequently become weak and leggy; and although all good cultivators like to see their fruit trees and flowers as near to the ground as possible, they hesitate to pot or plant the young plants deeply through fear of failure. I can assure such that they need hesitate no longer. I have tried several experiments in regard to deep potting and planting during the last year, and now make a regular practice of potting deeply, and burying an inch or two of stem at planting time in the case of all plants in the

least leggy. The practice not only insures the envied truss of flowers near the soil, but also gives the plant greater root force, for roots are quickly emitted from the buried stem.

We have just been repotting plants which were potted deeply some weeks ago, and in every instance white fleshy roots had been sent out from the buried portions of the stem. An immense amount of Tomato potting will during the next few weeks be done in various parts of the country, and I invite all interested to test the matter for themselves, and, with the Editor's permission, record their experiences in the *Journal of Horticulture*.—PRACTICE.

POTTING COMPOSTS.

At this season, when a large amount of potting is being daily performed in the majority of establishments, it is well to sometimes think over our cultural practices, and endeavour, if possible, in some way, to improve them. No matter how successful a man may be in plant-growing, there are generally some instances in which the desired results are not obtained. Plants which promised well in one stage of their growth after being potted will occasionally fail to start properly, and even if after a good deal of "nursing" they eventually succeed, "time and labour" are lost in our efforts to put matters right, and few things are more valuable in present days than these commodities.

It is, therefore, obviously of the utmost importance to mix such composts for various plants as our experience has taught us are safe ones to employ. But here another difficulty presents itself—we cannot always obtain the same kind of loam or peat, as they vary considerably in different districts, and a certain amount of experience in each locality is necessary before one can with certainty prepare suitable potting composts. The soils of some districts are so full of eelworms that many plants never succeed in them unless special preparation is given. I have known instances in which good cultivators could never succeed in growing Malmaison until the simple plan of first burning the potting soil was practised, then with the same cultural practices in other respects all went on satisfactorily. How simple a proceeding to employ to convert failure into success; yet I suspect that it is generally by simple means thought of at the right time that most difficulties are overcome.

One cardinal rule to be remembered in preparing composts of all descriptions is to avoid using soil which has the slightest suspicion of sourness. In making this statement I do not condemn the use of old potting soil, as by reason of the decaying humus it contains it is particularly useful in spring time for potting off seedlings or newly rooted plants, but the only safe course to pursue with it is to have a systematic method of preparing it for use. My practice is to have it placed in a heap in the open air for twelve months before use, so that air, heat, and moisture may sweeten and enrich it. The heap ought to be turned at least once, giving a sprinkling of newly slaked lime as the work proceeds. With the addition of a little burnt refuse and sand we then have a compost suitable for all kinds of softwooded plants and seedlings.

Turning to such plants as Fuchsias, Zonal Pelargoniums, and Marguerites, it is common practice now to use a simpler mixture than formerly. Old Tomato soil, decaying turfy loam, or even good garden soil, with the addition of one-fourth of stable manure and a similar quantity of leaf soil, form a regulation compost often used. But as a matter of fact many noted market growers use loam without any addition. This loam is often almost devoid of fibre, and inclined to be heavy, yet the plants, which are potted firmly in it, under good management turn out wonderfully sturdy and floriferous.

Plants potted in materials of this description require comparatively little water until the soil is permeated with roots, and even then water is required less frequently than in the case of plants potted in a lighter soil; indeed judgment in this matter makes all the difference between success and failure, and a practical waterer must always be able to discriminate between plants potted in light soil and others in heavy. The good results obtained by the use of such simple composts are largely brought about by the aid of chemical manures, as without them I make bold to assert the cultural feats now accomplished would be impossible. When once the roots of plants begin to work in new soil periodical dressings of the best of these manures seem to give the plants a wonderfully increased power of root production.

The food contained in these manures being in such a condition as plants can at once assimilate, enables them to penetrate it in a few days, whereas in the case of natural manures decay must begin before the roots can obtain food, and then only a limited amount is given up at a time. This perhaps accounts for the remarkable results to be obtained by the use of chemical manures for pot plants. From the foregoing remarks I think we may deduce the sound fact that in the culture of softwooded plants in small pots the vital point to aim at in preparing composts is to use only soils which are sweet, and rely upon chemical manures to do the rest.—H. D.

ASPARAGUS NOTES.

Mr. Shalford (page 60) says, it is difficult to write anything new bearing on Asparagus culture, and this is no doubt true. The same, however, may be just as correctly said of other vegetables; but this is no reason for apology on Mr. Shalford's part, because the routine of so variable a character, yet so clearly given, must be helpful to the younger gardeners, so many of whom are readers of the *Journal of Horticulture*. It is to young men who have just taken upon themselves the responsibility in the position of gardener, head or otherwise, that hints in vegetable growing are helpful.

There is no uniformity of result, or any one particular rule governing the cultivation of Asparagus, but individual gardens require treatment according to the nature of the soil and position, and there is a wonderful and varying influence brought to bear upon this vegetable from the character of the land alone. In light sandy soils with plenty of manure it will, as Mr. Shalford says, grow like a weed; in heavy and strong land it is just the reverse, except special provision is made for planting.

I well remember Mr. Iggulden, when at Marston, found a difficulty in establishing satisfactory plantations until he made a special effort to obtain the materials for raising the beds to the level of the natural soil, a good depth of drainage being the first provision. Although on a large scale it is a laborious undertaking, it is work that is well repaid in after years, especially in cases where they are intended for use over a long series of years. At Marston the soil is of a very heavy nature, the subsoil being stiff clay. Planted in the natural surface soil, the roots perished to a serious extent in winter, and frequent purchases had to be made for replacing losses which occurred. The soil here is neither so wet nor heavy as at Marston, but some portions of this garden are totally unfitted for Asparagus, given ordinary attention. Roots and crowns decay to a serious degree, which means thin beds and poor crops; in fact, the ground is simply wasted in attempting to grow it under the usual easy methods.

Another aspect not mentioned by Mr. Shalford, but which is a very prominent one, is presented in the late date on which cutting commences on heavy ground. It becomes disappointing to a degree when your neighbour, perhaps no great distance away, begins cutting heads in fair abundance several days in advance of yourself; and Asparagus is a vegetable perhaps, more than any other, in which the first dish is anxiously anticipated. Heavy dressings of manure put on in winter and left until the spring months have well advanced are fatal to early cutting. Personally I have no sympathy with thick coatings of farm manure to be again removed in spring, nor with the cutting of deep alleys between the beds, shearing off the roots and exposing the mutilated parts to the action of wintry weather. Short manure, either in a decayed or fresh state, and this allowed to remain, seems to me more beneficial to the beds and very materially reduces the attendant labour, and this is a consideration that few can afford to lightly set aside.

The planting season does not occur until April, but in the interval there is time to prepare new beds. From now onwards there will be much refuse about the garden to be cleared away, and the preparation for Asparagus beds affords an easy means of dealing with what would otherwise be a laborious undertaking in a large garden. Throw out the soil the width and length intended to a depth of a foot or 15 inches—more if the operator wish. This will take a considerable amount of refuse to fill; then a good layer of manure, decayed or fresh, spread over this, and the soil replaced, the bed will be elevated above the surrounding surface. The refuse and manure beneath will sustain the plants for a long time, and their productiveness will increase as the roots take possession of such a good store of decaying matter. The tenacious Asparagus is to burrow deeply, and this explains pretty clearly why plants collapse in heavy soil not well prepared. In deeply excavated trenches tree prunings may be made to serve as drainage very effectively.

I agree with Mr. Shalford, that salt sometimes is too freely used; in light soil its injurious effects may not be so clearly seen, but on heavy land it makes the surface pasty and cold. It is a better practice to give a lighter dressing twice, or even three times during the summer. Salt used for bacon-curing purposes has not much value in it, although it is often purchased by growers in the district where bacon "factories" are located. I have tried it, and noticed that the weeds simply revelled in it; and salt that has not sufficient property left in it to hinder, if not actually destroy weeds, must prove an unprofitable investment. A smaller quantity of a good article must be an all-round advantage.

In dealing with the permanent planting of Asparagus it is most important that the ground be quite clear of perennial weeds, such as knotted or plain rooted Couch Grass and Bindweed, for if these once get established among Asparagus roots neither salt nor other antidotes will exterminate them. The only course open is to destroy the beds and replant others in fresh ground. Under the best conditions there seems, so far as I can ascertain, no limit to the age in which

Asparagus will remain productive. I know of beds at the present time that have existed over sixty years, and are still as healthy and vigorous as ever. With generous treatment it would be impossible to predict a time when they would cease to produce their annual crop. These are raised beds overlying a heavy clay subsoil, and their position not so favourable as to give the plants the prospect of such a long and useful career.—W. S., *Wills*.

FUCHSIA CULTURE

THE best period of the year has arrived for commencing the spring culture of old-established Fuchsia plants. Medium-sized and large specimens do good service during the summer months in brightening the conservatory and greenhouse with their richly coloured pendent blooms. The Fuchsia is not the best of plants for affording cut blooms of the most useful character, yet the flowers may be cut and employed for some purposes. The true character of the Fuchsia is as a decorative plant, whether it is grown in pots or planted out.

Plants may be grown in various ways. Standards with a head of growth on the summit of a single stem are extremely useful in a collection to stand above dwarfier plants. Trained in pyramid form, well flowered examples are certainly attractive. They are not difficult to produce in this manner either from seed or cuttings. Less informal plants also may prove useful, and if healthy and free growing they will at the proper time bloom freely. Plants grown in tubs or pots and trained on wires under the roof can be established permanently, and allowed to cover as much space as convenient with several principal branches, on which spurs may be formed, and these have the long growths which issue from them shortened to a few buds each year.

Fine plants can soon be established if planting cut in a border be adopted, so that the roots will have a free run in good soil. Long, strong growths are quickly produced, and these ought to be laid in at equal distances to cover the space it is desirable to furnish. It may not be possible to carry it out in one season, but it can eventually be done.

Plants in pots which have been wintering in a cool frost-proof structure, and kept moderately dry at the roots, may now be brought out, and the growths pruned back. Old plants which have their shape fully formed should receive close pruning, shortening the shoots to a few buds. Those that are less informally trained and young plants need not be so closely pruned, reducing the length of strong young shoots one or two-thirds, and weak spray closely or cut out completely. The main thing in pruning Fuchsias is to cut out all unripe wood. So long as this is done, and no particular shape of plant is desired, they will succeed. The permanent plants in pots and borders require similar pruning, but as a rule must be fairly closely reduced. After pruning give the roots little water until new growth commences, then afford more.

At this time with pot plants it is found the best period to shake out the plants from the old soil, trim the roots slightly, and repot in fresh soil and clean pots of the same size. The compost employed should be sweet and rich, formed principally of turfy loam, leaf soil, old manure, and sand. The proportions may be loam four parts, leaf soil two parts, old hotbed manure or well decayed cow manure one part, with a good sprinkling of sand. Pot firmly, but not hard.

It will be an advantage if the plants can be stood in a warm house and daily syringed. The soil being moist when potting little water will be required at the roots until they are working freely in the new compost. Permanent plants in borders, large pots, or tubs cannot be so easily dealt with at the roots, nor do they require it so much, but they may at least have some of the old soil taken away from the surface down to the roots, and a layer of fresh material added. Into this a network of young fibres will ramify, and benefit the growth and flowering to a large extent. These Fuchsias scarcely need so much syringing of the early growth as those in pots, but when well advanced an occasional thorough wetting cannot but be of service previous to the growth becoming heavy and commencing to flower.

Pot plants making good growth will probably require additional root room. This must be decided by the number of roots and their activity. Give a free and liberal shift if it is found necessary to afford more room.

Young rooted plants in cutting pots, or established singly in small-sized pots, may be potted in the compost recommended for older plants. They can be simply grown to one principal stem and lateral growths encouraged to form, or be pinched in order to form several growths. Standards are formed by taking up a principal stem to the height required, then pinch out the top and encourage several growths to extend, which also may be topped when long enough, so as to increase the number.

Spring is a suitable time to propagate Fuchsias. Strong young growths starting from old stems form very suitable cuttings. Insert in sandy soil singly in thumb pots or round the edges of 3-inch pots, placing in a propagating frame, or under a hand-glass in a warm moist house, until rooted. Divide, and pot singly, growing them for any purpose desired.—E. D. S.



CYMBIDIUM HOOKERIANUM (GRANDIFLORUM).

LARGE numbers of Cymbidiums are grown in various places throughout the country, and with reasonably good care and attention seldom fail to give complete satisfaction to their owners. Handsome plants of Cymbidium Lowianum have a most telling effect in rockeries in houses of suitable temperature, such as that at Clare Lawn, East Sheen, the residence of Sir Frederic Wigan, Bart. There, as so excellently grown by Mr. W. H. Young, they are superb, and receive the unstinted praise of every visitor. The species *C. Hookerianum* is a most attractive one. Williams' "Orchid Manual" says it is, "similar in its habit of growth to *C. giganteum*, with tough leathery strap-shaped distichous leaves 2 feet long, striped with yellow along their sheathing base. The scape is radical, erect, nodding in the upper floriferous part. The individual blossoms (fig. 22) are very large, 4 to 5 inches in diameter, the sepals and petals yellowish green, and the lip straw coloured, deeper yellow at the margins, near which, on the crispy ciliate front lobe, are large blotches of rich crimson purple, while the flat-fringed acute-angled side lobes are covered with smaller crimson dots; a pair of velvety crimson spotted lamellæ occupy the disc." It is a native of the Sikkim mountains, and should be grown in the *Cattleya* house. This will probably meet "Orchid Grower's" requirements.

CHARCOAL FOR ORCHIDS.

MUCH has been written respecting the benefits to be derived from the use of charcoal in the different composts for Orchids. I should much like to know if it is really necessary to their well-being. For some years past I have discarded it, and as yet I cannot see any ill effects. I still think if we treated Orchids more rationally, and did not do so much coddling, we should not hear of so many failures.—J. T. B., *Hessle*.

[Charcoal is not absolutely necessary to the well-being of Orchids, as "J. T. B." has proved by growing plants without it for "some years." It is, nevertheless, one of the most useful aids to culture, and it would be interesting to know why your correspondent has discontinued using it. Charcoal cannot possibly do any harm if it is of the right quality, and has been several times slightly damped before use. It is lighter than crocks, and therefore more suitable for mixing with the compost. It takes up moisture easily, and gives it off again to the root spongioles, while the roots show their liking to it by clinging to it firmly. When repotting plants out of order, we have often found the only healthy roots to be those that had by chance found a bit of charcoal.]

As to the coddling, this has nothing to do with the question; the charcoal is used as a means of assisting the compost, for if nothing but moss and peat be used, this would get very sour and close, while, as mentioned, the charcoal is lighter than the crocks sometimes used for the purpose. Different kinds of volcanic substance, such as tufa, are often used in place of either, and very good results have been obtained. These are not, however, always easy to get at, while charcoal is to be obtained at a very cheap rate, or it may be prepared at home. Thus, unless "J. T. B." can give a specific reason for not using it, most Orchid growers will still probably go on in the old way, and really some very good plants have ere now been grown by its aid.]

PHALLENOPSIS SANDERIANA.

This must certainly be regarded as one of the finest Moth Orchids in cultivation. The foliage is like that of *P. Schilleriana*, but not so distinctly tessellated; the flowers occur on fine racemes, about half a dozen on each, though plenty of instances could no doubt be given of larger numbers. Each flower is about 3 inches across, the colour varying from a pretty soft rose to pure white. It is a good grower, and thrives well in abundance of heat and moisture in company with *P. Schilleriana* and other well known kinds. Its habitat is in Mindanao, and probably other islands of the Philippine group, and has been found growing in close proximity to the lovely *Vanda Sanderiana*. It was discovered by one of Messrs. Sanders' collectors about 1882.

SACCOLABIUM HENDERSONIANUM.

The pretty erect racemes of flowers produced by this species make it worthy a place in every collection. The habit is dwarf, and the flowers are a bright rosy red with a pale lip. The East Indian house is the most suitable place for its growth, and, like others in the genus, it delights in ample sunlight, so that the plants may be brought right up to the glass, and only shaded when it becomes absolutely necessary to prevent injury to the foliage. This treatment, with a brisk moist heat, will cause the growth to be very free, yet hard and floriferous.

It is the foliage grown in dark, shady, overheated houses, with too little air, that is apt to fail at a critical time, such as during a long spell of damp, wintry and dull weather, the lower leaves falling and giving the plants a most unhappy appearance. *S. Hendersonianum* does not require a very large or wide pot or basket, but at the same time there must be sufficient compost to hold moisture, as when growing freely it likes ample. The compost may consist of clean sphagnum moss and charcoal only, above good drainage. During the resting season, that is when the points of the roots closed over give only moisture enough to keep foliage and roots plump. *S. Hendersonianum* is a native of Borneo, and is always found in moist positions, often overhanging streams.—H. R. R.



FIG. 22.—CYMBIDIUM HOOKERIANUM (GRANDIFLORUM).

FOOD OF PLANTS.

THE remarks of your correspondent, Mr. D. Thomson, in the latter part of his article on page 78 of the Journal, are much in harmony with the practice that was followed in the gardens where I held a subordinate position some years ago, and although the atmospheric feeding of plants was done in a different way from that described, I think it amounted to practically the same thing. Instead of fermenting beds of leaves and manure, a tank which received the sewage from the house, outhouses, and other outbuildings, was the agency which supplied the atmosphere of the houses with food and moisture. The water from the tank was carted to a convenient place near the garden and used for damping-down purposes instead of clear water; this was done three times daily, sometimes more, according to the weather.

Orchids, stove plants, Melons, Cucumbers, and Vines responded to the treatment by making luxuriant, healthy growth. It seemed quite wholesome to oneself after getting used to it, and even the ladies offered no objection. I have looked for the sewage in two or three places where I have practiced since; but, alas! it is drained away instead of emptying into a tank, whence it might be used with advantage in the garden. In my present place it empties into the lake, and I get a sniff of it sometimes in the summer, that reminds me of the atmosphere of the houses of which I have spoken. In writing this note I do so in response to the last paragraph of Mr. Thomson's article, not as a teacher or a scientist, but as a labourer suggesting a better method of feeding through the atmosphere.—R. M.



WEATHER IN LONDON.—On each morning of the latter half of the past week there has been a sharp frost. On Friday and Saturday they were rather severe, reaching 12° on the former day; but during the evening of Saturday there came a change to milder conditions, and for some hours on Sunday morning rain fell steadily. Afterwards, and continuing until midday Monday, it was dry, and a light though cold wind prevailed. After this time rain fell heavily until night and again on Tuesday, though there were occasional gleams of sunshine. Wednesday was very wet.

— WEATHER IN THE NORTH.—Although not so severe as in the preceding week, the frost has been continuous up to the 6th, and has ranged from 4° to 12° . Occasionally there has been some appearance of a thaw, but this has not been confirmed. On Monday there was a pretty general fall of snow, but in the evening there was a renewed indication of milder weather.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society will take place in the Drill Hall, Westminster, on Tuesday, February 14th. The various Committees will assemble at noon as usual, and at three o'clock the annual general meeting of the Society will be held at the Society's Offices, 117, Victoria Street, Westminster, S.W.

— DEATH OF MR. FOLLOWS.—We learn with regret of the recent demise of Mr. Follows, for many years accountant to the firm of Follows and Bate, Ltd., engineers, Manchester. He was brother to Mr. F. W. Follows, the present head of the firm. The deceased was a great lover of wild flowers and birds, and spent much time amongst them. He was a member of the Society of Friends.

— SINGLE-HANDED GARDENERS.—My good friend Mr. Thornton seems rather troubled as to the shaping of a proper definition for this section of gardeners. It is easier to make suggestions of a general nature than it is to satisfy the needs of every case. Really gardeners' circumstances vary so much that very often cases can be dealt with only on their merits by exhibition executives. For general purposes it may be sufficient to describe a single-handed gardener as one "who has no constant assistance," or as one "who has only occasional assistance," or as one "who has no assistance whatever." But the latter describes a line that is too hard and fast, and either of the others seem to meet the general needs of the case, though they may not every individual case. But even at so popular a show as is that at Beckenham the class does not include so many competitors, but each one's circumstances are pretty well known, and then placed into that category which most nearly fits him.—A. DEAN.

— DEVON FINGER-AND-TOE EXPERIMENTS.—Experiments were conducted last season at Corringdon Farm, South Brent, for the purpose of testing the value of ground lime as a cure for "finger-and-toe" in Turnips. It was thought that a small quantity of ground quicklime, thoroughly incorporated with the soil, would do much to prevent this scourge, if not cure it altogether. The field chosen for the trial had a bad reputation for finger-and-toe, and half an acre of this was divided into five plots. The whole of the half acre was dressed with quicklime at the rate of a ton to the acre some three months before the sowing of the crop, and another dressing at the same rate was applied five weeks before the crop was put in. The five plots into which the half acre was divided were each dressed with different manures. The plot which gave the best yield, says a contemporary, was that dressed with basic slag alone, applied in April, while that dressed with slag and superphosphate mixed and applied at the time of sowing gave just over a ton less, the plot dressed with superphosphate alone coming next, while basic slag and bonemeal followed, but farmyard manure alone gave less than half of any of the others. It must be remembered, however, that manure on an infected farm is one of the surest means of retaining the fungus. These experiments, as a whole, when compared with the rest of the field, show that lime had had a very beneficial effect, and, though no part of the field was free from infection, there were far less traces of it in the limed plots, and a difference of 4 or 5 tons in the weight of the crop was noticeable. Some of the unlimed parts produced very little crop at all.

— GARDENING APPOINTMENTS.—Mr. S. Barker, for the last six years foreman in the Lord Burton's garden at Rangemore, Burton-on-Trent, has been appointed head gardener to his Grace the Duke of Newcastle, Clumber, Notts. Mr. A. Shilton, late of the Rangemore Gardens, has been appointed head gardener to the Hon. Mrs. Bass, Needwood, near Burton-on-Trent.

— MR. GEO. WYTHES, V.M.H.—We are informed that subsequent upon the death of the late Duke of Northumberland some changes are being effected at Alnwick Castle. Mr. G. Harris, who has had charge of the gardens for some years, is about to commence business in Alnwick, and Mr. Geo. Wythes, of Syon House, will hereafter have the northern estate added to his charge. It is a large undertaking, but Mr. Wythes is a strong man and will doubtless prove himself equal to it.

— GRAND YORKSHIRE GALA.—The schedule of the Floral Fête which is to be held in the Bootham Field, York, on June 14th, 15th, and 16th of the current year, has just reached us from the Secretary, Mr. C. W. Simmons. As usual, the number of classes approaches 100, of which several are new. Those that have been in before are still credited with generous prizes, as indeed are the ones that have been freshly incorporated. These comprise classes for "a group of Rhododendrons; a group of Gloxinias; a gold medal for the best exhibit of floral designs; a table of Orchids; an ornamental stand of flowers and foliage, and others." The comparatively few rules are simple and clear. All information can be obtained from Mr. C. Simmons, Harker's Hotel, York.

— NEW F.R.H.S.'s.—At the meeting at the Drill Hall on January 31st no less than seventy-three new Fellows of the R.H.S. were proposed for nomination. As there were nearly as many proposed, and of course elected, at the previous January meeting, that represents for the first month of the year alone some 140—surely a record nomination for January in any year. Better evidence of the high position the Society holds, and its great popularity, could not well be furnished. None the less, it is strange that its operation seems to excite so little interest in Royal circles. That seems inexplicable, and needs explanation. The experiment of holding two meetings in so dead a winter month as is January, apparently not justified at the first gathering, was amply so at the recent meeting, when quite a pretty and interesting show was furnished. No doubt for the rest of the year we shall see the displays increase in bulk and interest.—D.

— WOODBRIDGE HORTICULTURAL SOCIETY.—The annual meeting of the subscribers and others interested in the Horticultural Society was held on Friday last, Capt. R. J. Carthew presiding. The financial statement for the past year was presented by the Hon. Secretary, Mr. John Andrews, and showed a total income of £374 13s. 7d., and expenditure of £374 10s. 2d., leaving a balance in hand of 3s. 5d. On the proposition of Mr. John Loder, seconded by Mr. Alfred Gall, a hearty vote of thanks was given to Capt. R. J. Carthew for granting his beautiful grounds for the site of the show. A similar vote was accorded to the Hon. Secretary, Mr. John Andrews, whose services and zeal for the success of the Society cannot be too highly extolled. Col. Salmon, Mr. T. G. Heatley, Mr. S. T. Pulham, and Mr. J. Easton were elected to fill vacancies on the Committee. Thursday, July 13th, was fixed as the date of the show for this year.

— ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves presided over a good attendance of members. Mr. Geo. Bennett, Ryde, gave an interesting lecture on the "Cultivation of Potatoes." The lecturer deprecated the practice of planting sets with shoots on, as his experience convinced him they did much better when planted without shoots; he also strongly recommended early and deep planting, a depth of about 9 inches he should advise as being the most suitable. Flat hoeing he considered most beneficial, but earthing of Potatoes he thought quite unnecessary. The subsequent discussion was taken part in by a large number of those present, who detailed their experiences in Potato culture. A vote of thanks was accorded the lecturer on the proposition of the Chairman, seconded by Mr. J. O. Brook, and supported by Mr. T. Gibbs. The exhibits staged consisted of clean and well grown plants of *Solanum capsicastrum* and *Camellia* blooms exhibited by Mr. W. Morris, gardener to Captain Eveleigh, Newport, and some fine Primulas from Mr. W. E. Wickens, gardener to R. R. Pittis, Esq., Tugley House, Newport. The exhibitors each received the Association certificate for cultural merit. A mid-monthly meeting of the Association will take place at Whitwell on the 18th inst., when a lecture will be given on "Bees and Bee-keeping."—S. H.

— **SUSSEX WEATHER.**—The total rainfall at Stonehurst, Ardingley, for January, was 3.34 inches, being 1.21 inch above the average. The heaviest fall, 0.53 inch, on the 15th. Rain fell on eighteen days. The maximum temperature was 52° on the 12th and 18th, the minimum 28° on the 26th. Mean maximum 45.19°, mean minimum 36.22°, mean temperature 40.70°, which is 4.21° above the average. Since the 24th the wind has been N.E., with a cooler and dryer atmosphere, giving us several days of bright sunshine, with slight frosts.—R. I.

— **JANUARY WEATHER AT HODSOCK PRIORY.**—Mean temperature, 39.8°. Maximum in the screen, 56.2° on the 21st; minimum in the screen, 18.8 on the 26th. Minimum on the grass, 12.3° on the 26th. No. of frosts, in the shade, 10; on the grass, 24. Sunshine, 33 hours, or 14 per cent. of the possible duration. Rainfall, 1.90 inch; difference from average 0.10 inch. Rain fell on twenty-two days. Maximum fall, 0.34 inch on the 15th. Another mild month with very little frost. Stormy, but no heavy falls of rain.—J. MALLENDER, *Workshop*.

— **THE WEATHER LAST MONTH.**—The prevailing direction of the wind was south on twenty-one days. The total rainfall was 2.70 inches; this fell on twenty-two days, and is 0.92 inch above the average for the month. The greatest daily fall was 0.53 inch on the 21st. Barometer (corrected and reduced), highest reading 30.761 inches on the 26th, at 9 A.M.; lowest reading 28.851 inches on the 2nd, at 9 A.M. Thermometers: Highest in the shade 56°, on the 21st; lowest 20°, on the 25th; mean of daily maxima 45.87°; mean of daily minima 34.12°; mean temperature of the month 39.99°; lowest on the grass 15°, on the 25th; highest in the sun 88°, on the 26th; mean temperature of the earth 3 feet deep, 41.48°. Total sunshine, 67 hours 35 minutes. There were eight sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

— **JANUARY WEATHER AT DOWLAIS.**—Rainfall, 9.81 inches, which fell on twenty-two days; greatest fall, 2.43 inches, on the 20th. Temperature, mean maximum, 41.548°. Highest reading, 46°, on the 5th; mean minimum, 29.870°. Lowest reading, 16°, on the 25th (being 1° lower than at any time last year). Below freezing point on twenty days, with seventeen sunless days. The wind was in the S. and S.W. on fourteen days, and in the E. and N.E. on eleven days. On the 1st of the month we had hail, rain, snow, thunder, and lightning; a heavy storm on the 16th, rain, hail, thunder and lightning. A terribly stormy month, the wind on several occasions was terrific, especially from the 20th to the 22nd inclusive. Since then it has been quiet with very sharp frosts. From December 25th to January 22nd 14.69 inches of rain fell, the greatest daily fall being 2.82 on December 26th.—WM. MABBOTT.

— **TRAPPING BULLFINCHES.**—Excellent advice "Avis," on page 83, and if you had added 2 to 4 ozs. of softsoap to the gallon, and recommended also applying the mixture as hot as the finger can be borne in it, you would have repeated what I have advised hundreds to use, both to deter birds taking the buds and to kill insect pests, such as aphides and red spider. I found these hatched out a fortnight ago, and how they will stand the frosts I shall be anxious to see. My advice *re* bullfinches is an alternative to the gun and the damage to fruit trees, their general fate; and as people will have cage birds, why not the most destructive bird we have, remembering that they will take clean out and prevent any future growth, twenty to twenty-five Green Gage buds in a minute? Although sixty-two have so far placed themselves in cages in my garden this winter, there will be a plentiful stock left for breeding, for I heard of thirty being driven from our nearest fruit plantation yesterday, and the woods are alive with them.—J. HAM, *Astwood Bank, Redditch*.

— **PROTECTING ORCHARDS FROM LIGHT FROSTS.**—It was, we believe, William Saunders, the chief of the Government Experiment Gardens at Washington, who, some fifty years ago, insisted that the text books were wrong in teaching that heated air ascended—that is, ascended in an active sense. It was, rather, pushed up by the heavier cold air pressing against it. It seems a slight distinction, but it has immense practical importance. For instance, those who understand this smile at the Florida Orange grower, who builds fires around his orchard to make smoke when he fears a frost is coming. He lightens the atmosphere at the same time among the trees, and makes it all the easier for the heavy cold air to push in and take its place. The modern thought to spray with water is more philosophical. Water is a good conductor of heat, and would add to the chances of resisting cold by the heat it would abstract from its surroundings. Horticulturists have long known that evergreens are quite hardy in a moist atmosphere, when they would easily succumb under the same temperature in a dry one.—("Meehan's Monthly.")

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held, by kind permission of the Council, at Great George Street, Westminster, on Wednesday the 15th inst., at 7.30 P.M., the following papers will be read:—"Report on the Phenological Observations for 1898," by Edward Mawley, F.R.Met.Soc., F.R.I.S. "The Circulation of the Atmosphere," by Prof. W. M. Davis, M.A.

— **CLEMATIS INDIVISA.**—There are few more charming members of the Clematis family than the variety mentioned above, and perhaps there are none more useful. The pillars and walls of a cool conservatory or corridor suit it admirably, as the plant is not quite hardy enough for outdoor culture. It is robust in habit, quickly covering the space allotted to it, and its stout green foliage possesses the characteristic of keeping remarkably clean. The graceful white flowers are produced in great profusion in the spring, and are useful for many forms of decoration. The flowers are borne in clusters, and will last some time in a cut state if gathered young. Being light and elegant they are well suited for the make-up of wreaths, crosses, and bouquets, as well as for table and other decorations. Given a free space for rambling and a fair rooting medium Clematis indivisa is one of the most charming of climbing plants for a cool house.—H.

— **A PLEASING COMBINATION.**—There is now no lack of White Roman Hyacinths for decorative purposes, and there is no need to enlarge upon the sweetness and elegance of these chaste flowers. Another well known and popular plant is now also in bloom, *Cypripedium insigne*, than which there is no more useful and accommodating member of the Slipper Orchid family. The blooms of this Orchid, used in conjunction with White Roman Hyacinths, make a most happy blend for table and room decoration. The flowers of the former, of course, last double the time of those of the latter, but when the Hyacinths are beginning to show signs of failing they may be removed, fresh water given, and others put in their place. As a decorative flower *Cypripedium insigne* is unique on account of its elegant habit and the long time over which it will keep in good condition after being cut. The two flowers mentioned and tips of scarlet Poinsettias make a pleasing decoration for a dinner table.—G.

— **BROWNEA CRAWFORDI.**—One of the most striking plants at present in flower at Kew is the subject of this note. It is planted out in a bed of loam in the Palm house, where it has formed a large spreading bush 15 feet high, with pinnate leaves 2 feet long. Altogether there are upwards of twenty heads of flowers open now, and a fine display is made. The flowers are bright red, with orange coloured anthers. They are borne in dense globular heads, 7 to 8 inches across and 4 inches deep. The stamens protrude an inch or more from the mouth of the corolla, and twist about in such a manner as to resemble a tangled mass of red thread, with orange-coloured spots here and there. It is a hybrid, raised by the man after whom it is named, between *B. grandiceps* and *B. macrophylla*, and is an improvement on both. It can be flowered well in pots, but does much better under the more generous system of planting out. In addition to the beauty of its flowers, the foliage when young is lovely, the young leaves as they develop being mottled with beautiful shades of green and brown. Anyone with room in a large stove will do well to give this plant a trial.—KEWITE.

— **SALIX BABYLONICA NAPOLEONA.**—In the comprehensive list of Willows, described by Mons. Rebder in the "Deutsche Gartner-Zeitung," the variety known as Napoleon's Weeping Willow does not appear. I do not know if it is common in any part of the kingdom, but it will be interesting to know that there is an old and flourishing specimen growing within a few minutes' walk from where I am writing. Its history appears to be comparatively little known in this neighbourhood. Tradition, however, declares that it is a scion obtained indirectly from the celebrated Willow growing over Napoleon's tomb at St. Helena having been given to the late John Cox, Birmingham's celebrated landscape painter, by Napoleon III. from a specimen growing in the gardens of the Palace of the Luxembourg in Paris, when the artist was being conducted over the gardens by the late Emperor. His Majesty requested Cox to take anything from the gardens as a memento of his visit to Paris, and naturally he selected a cutting from a specimen Weeping Willow pointed out by the Emperor as a descendant of the original or St Helena tree, and this was placed in the grounds of Greenfield House, the residence of the artist. It is now growing by the side of one of the substantial brick-built and stone-capped carriage entrance gate pillars, and its graceful boughs depend both over the gateway and a portion of the public road. The tree appears to have attained the normal height of the variety, about 16 feet, according to "Johnson's Gardeners' Dictionary."—W. G.

— **AMATEUR WORLD OF HORTICULTURE.**—This is the official organ of the National Amateur Gardeners' Association, and the Secretary has just favoured us with the last quarterly number. It contains much of general interest, such as the papers of Plant Breeding, Hardy Fruit, and Intermediate Orchids, but naturally the major portion of the contents appeal most directly to members of the Association.

— **ARE NURSERYMEN'S ASSISTANTS DOMESTIC SERVANTS?**—A case of enormous importance to nurserymen and landscape gardeners has been decided at Manchester. Mr. James Treeby, nurseryman, sent a man to work in the garden of Mr. Estcourt, this gentleman paying Mr. Treeby for the man's services. The Revenue authorities claimed that Mr. Treeby should pay a license for this man as working in a private garden. The Stipendiary Magistrate agreed, and inflicted a fine of 5s. and costs. Leave was granted to state a case for appeal, and it can hardly be expected that nurserymen will acquiesce in a change from an universal custom that has been in operation for generations, if not for centuries. It will be a serious matter for many, if not most nurserymen, if the present decision stands, and the law as determined by the Magistrate generally enforced.

— **SINDACATO AGRICOLO DI TORINO.**—We are requested to state that an International Competition for Seed-sowing and Manure-spreading Machines, promoted by the Agricultural Syndicate, will be held in Turin from the 1st of March to the 30th of November, 1899. The awards will be—for seed-sowing machines: a, a gold medal, 250 francs in cash, and the acquisition, by the Board of Agriculture, of the machine winning this prize; b, a silver medal and 150 francs in cash; c, a silver medal and 100 francs in cash; and d, a bronze medal. For manure-spreading machines: a, a gold medal, 150 francs in cash, and the acquisition, by the Board of Agriculture, of the machine winning this prize; b, a silver medal and 100 francs in cash; c, a silver medal and 50 francs in cash; and d, a bronze medal. Demands for admission, which must be made not later than February 15th, 1899, and for further information, must be made to "Comitato Ordinatore," care of "Sindacato Agricolo," 49, Via Carlo Alberto, Torino, Italy.

— **ERYTHROCHITON HYPOPHYLLANTHUS.**—An example of this interesting plant is now in flower in the Palm house at Kew. It is about 15 feet in height, with a small branched head of dark green, leathery leaves 18 inches long. When out of flower it is a very ordinary looking plant, but when in flower the manner in which the flowers are produced makes it of great interest. These are borne usually two or three together from the under side of the midrib of the leaf, sometimes from near the base, and sometimes half-way along. They are pure white, and $1\frac{1}{2}$ inch across. Occasionally a secondary leaf attends the flowers. It was figured in the "Botanical Magazine," t. 5824 in 1870, and from the description given with it, it was flowered at Kew first in 1864, the plant being sent to Kew by M. Linden of Brussels, who introduced it from the province of Ocaia in New Grenada, where it was found growing in rocky ravines at an altitude of 2500 feet. A second species, *E. brasiliensis*, is in cultivation: this is the showier of the two, the flowers being borne in racemes a foot or more long. A figure and description of this may be seen in the "Botanical Magazine," t. 4742.—D.

— **COMMONS PRESERVATION SOCIETY.**—At a meeting of the Executive Committee it was reported that of the "private Bills to be introduced into Parliament in the coming session forty-seven come within the purview of the Society. The aggregate area of common lands affected is more than 1934 acres, while various Bills propose to take power to extinguish numerous public rights of way. Included amongst the Bills to which exception was taken by the Society, and which it was resolved to oppose unless suitable concessions are made in the public interest, is that by which power is sought to acquire 17 acres of Tottenham Marshes, and portions of Leyton, Walthamstow, and Cheshunt Marshes, and to acquire 2 acres of Earlswood Common, Redhill, a common which is the subject of a regulation scheme under the Commons Act, 1876. A special report was ordered to be made upon the Bill promoted by the East London Water Company, which proposes to absorb for new reservoirs no fewer than 194 acres of Lammas land in the parishes of Chingford and Waltham Cross. It was resolved to oppose the Bradford Tramways and Improvement Bill, by which the Corporation of Bradford seek to acquire the whole of the common lands of the Manor of Baildon, comprising altogether 770 acres of open space. Of this area the Corporation propose to sell 50 acres to provide money to meet the expenses of acquiring the land, while the lord of the manor will be compensated for his interests by the payment of a sum of £7000 and by the conveyance of a further 50 acres of the commons.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).**—A very successful annual meeting was held recently, Mr. J. H. Drake presiding. The Secretary, Mr. J. M. Smyth, read a capital report of the progress during the past year, which, after paying much larger sums as prizes, had a balance in hand of £5. The following sums were promised in the room—viz, A. L. Jones, Esq., and W. J. Davey, Esq., two patrons, 2 guineas each; Mr. Histed 1 guinea; and Mrs. Langley, for Essay, with Messrs. Hoskyn, Rowlands, Cangle, Butcher, and Drake, half a guinea each. The silver medal for highest number of points was won for the third time by Mr. A. Cooper, and the bronze medal by Mr. Cangle, the latter also winning the silver medal and certificate presented by Messrs. Toogood and Sons. The most successful exhibitors of the season were Messrs. Cangle and Lunt. Mr. Histed was unanimously elected President, and he promised to help the Society both in the matter of new members and also to the prize fund. Mr. Drake was heartily thanked for his conduct in the chair during the past year, a statement being made that, notwithstanding his pressing business affairs, he had been present at every meeting, and he was elected as Vice-President. Messrs. Smyth and Cooper were elected Hon. Secretaries, Mr. D. W. Cangle Exhibition Secretary, and Mr. Robins Hon. Treasurer. A hearty vote of thanks to the officers terminated the proceedings.—R. P. R.

LILIUMS AND THEIR TREATMENT.

At the recent fortnightly meeting of the Exeter and District Gardeners' Association at the Guildhall, Exeter, Mr. James Mayne, gardener to the Hon. Mark Rolle at Bicton, read a paper on "Liliums and Their Treatment." As yet, so far as he had been able to ascertain, no writer had told them by whom the Lily was introduced into Britain. Probably they were indebted to the Romans for that noble flower, as well as for many other good things in their gardens. With a proper supply of bulbs it was quite possible to have Liliums more or less in flower throughout the year, especially *Lilium longiflorum* and its varieties. Very few plants could compare with Liliums in the open garden on account of their variety of colour and fragrance, and all were more or less hardy.

Dealing first with those usually given pot culture, and giving the *longiflorum* and its varieties precedence, he advised that they should be procured as early as possible in the autumn, and potted without delay, as all the Lily tribe was more or less injured if allowed to get dry. When the shoots appeared the pots should be brought to the light without delay, and they should be kept as near the glass as possible right up to the time of flowering. If kept under glass during that period a sharp look out must be kept, as green fly was the greatest enemy of this Lily. The plants should be taken into the greenhouse as soon as the flower buds were seen, and there ought to be as little fire heat, or anything in the shape of coddling, as was possible. This kind, however, was easily spoilt by the wind and rain, and soon deteriorated under pot culture, so that he advised a fresh stock every year or so.

Lilium auratum, the Golden-rayed Lily of Japan, was the grandest of all, whether for pot culture or in the open ground. Unfortunately, this variety deteriorated after a few years under pot culture; in fact they were never so good as the first season when imported, and those who wished to keep up a good show would do well to purchase a few bulbs each autumn. The *speciosum* group, which annually flowered from the end of July to the end of September, a time when they were of the utmost value, did, as a rule, remarkably well under pot culture, and, what was more, were not so liable to dwindle away as the former varieties. Cold pits or frames were the best places to grow *auratum* and *speciosum* until they got too tall, when they should be removed to a cold house and kept near the roof. After passing out of flower the pots were often placed outside in some out-of-the-way corner, and probably got no water for days or, it might be, weeks should the weather set in dry. This ought not to be so; such a sudden withholding of water was detrimental to the bulbs, and those that flower in the early spring months, say up to May, should be given frame treatment for a time or until warmer nights set in. These varieties should be shaken out and repotted towards the end of October or early in November before root action again began.

No plants, he said, were more suitable than Liliums for the embellishment of the flower garden, and nearly all the family were hardy, provided the soil was well drained. Given a fairly good loam, the majority of them would thrive, and the cultivator could add peat and well-decayed manure, which the greater number of Liliums revelled in, underneath as well as a top-dressing. In choosing a position for *auratum* and other tall-growing kinds, preference should be given where they could be slightly shaded from the midday sun and from south-westerly gales. Generally speaking the finest examples were to be found growing among beds of *Rhododendrons* and *Azaleas*.

Dealing with the planting of the bulbs, Mr. Mayne said that the earlier in the autumn the better for the majority of the Liliums, as well as for the display of the first season. Beds that were entirely devoted to Liliums should have a carpeting of some plant or other during the summer months. These lovely bulbous plants grew and flowered in almost any position. The majority of them were inexpensive, which placed them within the reach of all possessing a garden, be it ever so small.—("Devon and Exeter Gazette.")

BIEL HOUSE.

AT a distance of six miles from the royal burgh of Dunbar is Biel House, one of the seats of Mrs. Hamilton Nisbet Dundas Ogilvy. The extensive estates owned by this lady in East Lothian were acquired by purchase in 1663 by Sir John Nisbet, then the most eminent lawyer at the Scottish bar, and afterwards a Lord of Session and King's Advocate. These estates include besides Biel House, Archerfield House, Winton Castle, and the ancient ruin of Dirleton Castle, formerly a seat of the Anglo-Norman family of De Vallibus. The mansion is admirably shown in fig. 23, page 109.

The glory of Biel from a garden point of view is its beautiful terraces and its fine pleasure grounds. My narrative will be one rather incomplete because of a hasty survey; but, nevertheless, I was impressed with their beauty and excellent keeping, as I have never seen a terrace garden more after my own ideas as regards summer brilliance than this. In the early days of September I paid my visit, and Mr. Muir, who has held the post of gardener here for a number of years, is to be congratulated on the condition and well keeping of the garden and grounds. The house is one of considerable length, and the terrace runs along the whole of the southern front. The upper terrace is a broad gravel walk edged with Box, and in wide borders on each side are bedding plants in great variety in bold distinct masses; no mixture whatever, and each is allowed to display itself. To those who have not practised or seen this style, it is especially recommended as far superior to alternating different species of plants in the same group or bed. The plants used were Golden Feather, *Perilla nankinensis*, *Petunias*, single; *Pentstemons*, *Heliotrope*, *Calceolaria* Golden Gem and *Calceolaria* Sparkler; tuberous *Begonias*, *Ageratum*, *Iresine* Lindenii and *Iresine* Herbstii; Sweet Alyssum, *Cuphea* platycentra, *Carnations*, and the following Zonal *Pelargoniums*—Henry Jacoby, *Vesuvius*, *Amaranth*, Mrs. Turner, Mrs. Mappin, Bijou, Flower of Spring, with the Ivy-leaved Madame Crousse.

A balcony from one of the upper rooms of the house had a group of plants composed of two large *Araucaria excelsa*, a large *Hydrangea hortensis*, *Fuchsias*, *Eucalyptus globulus*, Zonal *Pelargoniums* and blue *Lobelia*. A large clump of Pampas Grass was near the kitchen door, which is exactly in the centre of the house, whence a cross walk leads to the lower terrace, which is mostly planted with herbaceous plants. At the top of the steps leading to the second terrace were two large *Fuchsias* in 16-inch pots, and two curious, yet beautiful, vases, whose sides were *Echeveria secunda* glauca planted in a framework of wire. The mouth of the vases was overflowing with the brilliant crimson of Henry Jacoby Zonal *Pelargonium*.

Close to the house walls *Fuchsia Riccartoni* was flourishing, and great squares of *Tritoma Uvaria* with their glowing spikes. The back border on one side of the kitchen door for a considerable distance was filled with annuals—*Scabious* (German), *Asters*, *Coreopsis Drummondii*, *C. tinctoria*, *Gaillardias*, *Jacobæas*, *Nicotiana affinis*, with annual *Sunflowers*, *Dahlias*, *Gladiolus gandavensis* hybrids, *Chrysanthemums* Madame Desgrange and G. Wermig. These borders on the upper terrace were at least 10 feet in width, and presented a most gorgeous mass of colour. On the walls of the house were a large *Magnolia grandiflora* in flower, as well as *Kerria japonica*, *Jasmines*, and the fiery *Tropæolum majus*. An arbour near the kitchen door was overcanopied with *Clematis viticella* in flower. The castellated wall bounding the upper and lower terrace had overhanging its summit large bushes of *Juniperus sabina* variegata and *Cotoneaster microphylla*, while in the front of the wall on the higher terrace for the greater part of its length was a broad belt of *Tritoma Uvaria*.

Below these terraces are the pleasure grounds, formed by a valley with an intersecting stream. Along the sloping banks in the vale are many noble trees. Immediately in front of the house is one of the largest Cedars of Lebanon in the country; it is 60 feet high, has a spread of branches of 80 feet, and is 18 feet in circumference at the base, and was planted in 1810. Other noble Cedars of Lebanon are here, and the following also of large dimensions were noticed:—*Cedrus deodara*, *Wellingtonia gigantea*, *Libocedrus decurrens*, *Cupressus macrocarpa*, *C. Lawsoniana*, *C. nutkanensis*, *Araucaria imbricata*, purple Beech, two *Quercus Ilex*, Box trees, and Portugal Laurels, all in view from the terraces, and they proclaim the fertility of the soil of this part of East Lothian.

The kitchen gardens at Biel are small, and there are no fruit houses, the family wants in these respects being supplied from Archerfield and other places (Bloxholm Hall, in Lincolnshire, is another seat of Mrs. Hamilton Ogilvy). The houses at Biel are not extensive, and are devoted to plants, of which the general arrangement is artistic. There are no bare places; all unsightliness is hidden. One house, 35 feet long, had the front part of the roof covered with *Gloriosa superba*, with vermilion flowers; and the upper half of the back wall was clothed with *Allamanda Schottii*. This house contained large specimen *Crotons*, *Dracænas*, and *Pandanus Veitchii*, perfectly clean and healthy. *Caladium argyrites* and *Carex japonica* variegata furnished the fronts of the stages, and the *Caladium argyrites*, in 4½ inch pots, were very fine. Another house had a large *Areca lutescens* as a centre, around which was a bank of *Adiantum cuneatum*, rising up a foot from the ground; the lowest shelf was placed at that distance, and the highest at about 5 feet. *Coleus* were planted in front of the stages, which is a rather unusual but effective

plan, though perhaps they were not so bright in colour as when fully exposed to the light. A large *Clerodendron Thompsoni* was in flower in this house.

A span-roofed structure was filled with healthy *Crotons* in great variety. Amongst those I observed were Queen Victoria, Golden King, Mrs. Dorman, Weissmanni, Lord Derby, Countess, angustifolia, and elegantissima. There were also several very fine plants of *aigburthensis* and *picturatus*, grown to single stems and staked. Their height would be from 3 to 4 feet without the loss of a single leaf. Several exceptionally fine *Acalypha musaica* in 6-inch pots, clothed to the rim with leaves and having side branches naturally formed, were very conspicuous. *Eulalia japonica* variegata was represented by scores of admirably grown plants in 6-inch pots, and the stages were profusely draped with *Panicum variegatum*. Underneath *Pteris cretica albo-lineata* was growing luxuriantly in company with other Ferns and *Coleus*.

There were also houses filled with *Eucharis* and *Pancratiums*, *Tomatoes*, *Cucumbers*, and a lofty span-roofed conservatory in two divisions. The first division entered had along its rafters *Tropæolum* Ball of Fire, and at least a hundred superb tuberous *Begonias* on the side stages in 7-inch pots. They were remarkable for the size of their double flower and their profusion of bloom. *Fuchsias* occupied the central stages, and on the side stages were Zonal *Pelargoniums* and *Lilium auratum*, edged with fine plants of *Campanula isophylla alba*. The next division contained *Camellias*. The roof was covered with Gloire de Dijon, climbing *Niphetos*, and *Rubens* Roses. A very fine standard plant of *Datura* Knighti with large tubular-shaped double flowers was also in this house. Six hundred *Chrysanthemums* are grown at Biel, and all were in good health.—F. STREET.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 31ST.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Mr. Bennett-Poë, Dr. Muller, Rev. W. Wilks, Prof. Farmer, Mr. Michael, Prof. Balfour, Mr. A. Sutton, Rev. Prof. Henslow, Hon. Sec.; visitor, Mr. L. Sutton.

Potato grafting.—Mr. A. Sutton read an interesting paper on the results of grafting and hybridising Potatoes with Tomatoes. The following is an epitome of his results:—1, Maincrop Tomato was grafted upon Victoria Potato. The tubers thus formed by Tomato foliage only were very small. 2, *Solanum nigrum* grafted on Victoria; and 3, Egg plant, *Solanum esculentum*, grafted upon Supreme, produced tubers equal to the types.

Potato hybridising.—1, Woodstock Kidney was first grafted upon the Tomato, Earliest of All. The Potato flowers were pollinated by Tomato. The seed produced Potato plants with small and subsequently diseased tubers. They were quite round. The foliage resembled that of many other Potatoes. 2, With a similar graft, the flowers were self-fertilised. The resulting produce resembled Woodstock Kidney.

Solanum Maglia hybrids.—Some hundreds of flowers were pollinated from Potato flowers. Two seedlings only were obtained; one perished, the other produced a small tuber, which improved subsequently, but was much inferior to commercial Potatoes.

Solanum tuberosum.—The tubers received in 1887 were very small, but have now attained a marketable size.

Curious varieties of Potatoes.—Mr. Sutton also exhibited three kinds of Fir-Apple Potatoes. These are interesting as taking the form of rhizomes with projecting points under the eyes, giving a scale-like appearance. One kind has several branches. These Potatoes bear flowers, but produce no berries, the foliage resembling that of ordinary Potatoes. Another variety, received from Africa, was mottled in colour, and resembled the Fir-Apple Potato. The foliage is exceedingly dark coloured, and resembles that of the Stinging Nettle.

Tomatoes raised from grafts on Potato.—Victoria grafted with Tomato Maincrop. In two years seedlings bore fruit, but very distinct from Maincrop, the leaves being decidedly smaller, the fruit more numerous but smaller and earlier, also more corrugated. These differences became more pronounced in the following year. A unanimous vote of thanks was accorded to Mr. Sutton for his interesting and valuable paper.

Hollyhock disease.—Leaves attacked by *Puccinia malvacearum* were received from Mr. E. Molyneux; the mildew which has proved fatal to these plants for many years.

Cyclamen fasciated.—Dr. Masters exhibited specimens of this not unusual phenomenon of several flowers with leaves on the same stem.

Eucalyptus sp.—He also showed flowering specimen of *E. cordatus*, growing in the open in County Down; and of *E. globulus*, grown for forty years in Leicestershire. Prof. Balfour observed that on the coast of Ross-shire several plants characteristic of the Riviera thrive well, in consequence of the amelioration of the climate by the proximity of the Gulf Stream.

Cypripedium.—Dr. Masters also exhibited a blossom of a *Cypripedium*, in which the two normally coherent sepals were free.

Additions to the Library.—"Silva of North America," by C. S. Sargent, vol. xii, Coniferae; "Orchids of Sikkim-Himalaya," by G. King and R. Pantling, parts 1-4; "Bush Fruits of America," by F. W. Card; "Sketch of the Evolution of Our Native Fruits" (America), by L. H. Bailey; "Fertilisers," by E. B. Voorhies; and "Nouvelles Archives du Muséum," Tome Dixième.



THE N.C.S. AND INCURVED VARIETIES.

ON reading the Chrysanthemum notes in the Journal of the 2nd inst. I was rather surprised to find "Sadoc" taking objection to The Egyptian being included in the incurved section, and I rather expect he has not seen it in its true character. I have not seen many blooms of it staged, but it has been present in winning stands—first prize stands I believe—in the principal incurved class at Bristol for the past two years in typical form.

As to actual experience with it we grew one plant last year which carried three first-rate flowers as true to the incurved type as they could possibly be, and required scarcely any dressing. I should class it as being in the first rank of its section, and should say it would compare favourably with any variety we have, provided it keeps up to the high standard at which I have seen it.

I quite agree with "Sadoc" that the N.C.S. is sailing rather close to the wind with regard to some varieties that are included amongst the incurved, many of them requiring an amount of labour and patience to make them even presentable on the board, and are scarcely a credit to the section when there. As to varieties of The Egyptian type I should say the more of them the better.—J. WILKINSON, Bristol.

COMPLAINTS AND GRIEVANCES RE THE N.C.S.

WE have received another list of complaints on the past delinquencies and recent shortcomings of the N.C.S. As to the past it will be better to consider it as buried, as no possible good can be done by attempts at resuscitation, especially as it seems that a rule was adopted to prevent the recurrence of one of the practices complained of.

Among recent grievances is one stating that a certain exhibitor had a "gold medal" attached to the exhibit for which it was awarded four hours before the awards were placed on those of other trade growers. This we are in a position to explain, as our reporter happened to hear all that transpired on the subject.

The gold medallist, seeing that the judging was completed, at once stepped up to the Secretary and was told, in answer to a question on the subject, that he was awarded the gold medal. "Then," rejoined the exhibitor, "I suppose I may put on the card?" The response was, "Certainly," and the card was promptly obtained and attached by the exhibitor, not by the Secretary. It was on the eve of luncheon, and the official awards were not placed on the exhibits till afterwards. The particular exhibitor was "smart," no doubt, but so far as we can see his action was quite legitimate. If another exhibitor had acted similarly in a quick inquiry, and the Secretary had refused a reply of the same nature, he would have been open to the charge of "favouritism."

Another complaint has been made to us at least a dozen times, but we have not published it mainly because of the peculiar forms in which it has been presented. The grievance seems to be so keenly felt that we publish it now, as it is well to go to the bottom of things so far as this may be fathomable. This, then, is the terrible grievance—namely, that long notices appear in the columns of the London daily papers of the exhibits of one particular trader, while those of others are either passed or receive scant attention. If these notices were supplied by show officials the charge would be grave, but they are again the result of smart trade enterprise.

The gardening Press reporters recognise the merits or otherwise of what they inspect, and not only do not want any prompting, but would reject attempts in that direction; but it is totally different in the case of reporters for the "dailies." These ubiquitous individuals are glad to get hold of an expert to point out objects specially worthy of notice, and it is no secret to those who know that there are always expert exhibitors ready to get hold of them; indeed, it is not a little amusing to observe the finessing that is resorted to to "catch the speaker's eye"—or, rather, the reporter's ear.

This is not the case at the N.C.S. shows only, but at all important exhibitions, metropolitan and provincial. The editor and reporters of every gardening journal, when reading reports of horticultural shows in the "Morning Trumpeter" or "Evening Swaggerer," know very well who have been the prompters and inspirers. It may all seem wicked; but the world and its ways have to be taken as they exist, and the time does not appear to have arrived when a reporter's guide, philosopher, and friend will pass by his own splendid exhibits as only worthy of scant mention, and sing the praises of those of competitors which may or may not be better or worse than his own.

Whether the complainants of daily Press reports would act differently or not we cannot tell; but we should know if we read the reports of shows at which they had obtained the oft-coveted position of chaperon, perhaps to some fascinating young lady with a note-book. Now having pricked the bubble of the daily paper reports complained of, we cannot refrain from the expression of opinion that those who continue to indulge in their grievances against them will seem to be engaged in something like the quixotic exercise of tilting against windmills.

Other matters of complaint we have before us relate to the N.C.S. official selections and classification of Chrysanthemums. On these subjects a complainant writes:—"In the Year Book of the N.C.S. we find varieties which were not deemed worthy of a certificate given in the selections of the best, whilst varieties which have been certificated, both by the N.C.S. and R.H.S., are omitted." This is attributed to favouritism accorded to one exhibitor, and prejudice indulged in against another. We should require strong unbiassed testimony in support of the truth of such extraordinary allegations before admitting them as facts.

That such opinions exist is undoubted, and surely all will agree that it is better they should be fully known than passed from mouth to mouth, not being modified as they go, as if certain individuals had abused their position as responsible officials. We cannot possibly believe that this is the case, and it could not be without the presence of enemies in the camp, who would, with whatever object, be sapping the foundations of any society with the conduct of which they happened to be entrusted.

Reverting to the admittance of non-certificated varieties into officially recommended lists, and the exclusion of those which have been honoured by Floral Committees, we have no difficulty in agreeing with our correspondent when he says, "This does not say much for the value of certificates." It obviously does not, but savours rather of something like a stultification. The apparent conflict in estimating the merits of varieties is, however, perhaps explainable: as the matter stands it suggests either that there are some "experts" wiser than Floral Committees, or that the members of these, assuming that they made the selections, are expert in changing their minds.

Attention is also drawn to the "unwarrantable haste" in rushing novelties into the incurved section, one of which is "not to be distributed till 1900," while others are excluded, and one at least that has been certificated, both by the N.C.S. and R.H.S. We have no means of accounting for such decisions, whether they are right or wrong. We know they ought to be right, but our complainant evidently thinks they are not, because he says, "It is these little sins of omission and commission that the trade generally find so annoying." And he goes on to say, "A society styled 'National' should not allow favour to be shown to any firm, nor permit a representative of any firm on committees for selection and classification."

We did not know that such was the case; but assuming, for the sake of argument, it to be so, we should expect that any person having interest in anything placed before the Committee would promptly leave the table pending the consideration of the product. This is the custom at the R.H.S. Committees, and many persons besides ourselves will be surprised to hear it is not the same at the N.C.S.

In cases of grievances we wish to be absolutely fair to both sides interested, our only object being the elicitation of truth and the rectification of any imperfections in an amicable, business way.

Only when societies are widely trusted can they be permanently strong and satisfactorily fulfil the object for which they are established.

NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL MEETING.

ON Monday evening last the annual general meeting of this Society was held in St. Stephen's Hall, Royal Aquarium, Westminster, Mr. C. E. Shea presiding. In spite of the weather there was an excellent gathering, and the tone of the meeting was decidedly conciliatory, although the interest in the proceedings was keen. Under the able guidance of the Chairman, all the business was conducted with promptitude and strict regularity, which resulted in the last item on the agenda paper being reached shortly before half-past nine.

The business commenced with the Chairman calling upon the Secretary to read the notice convening the meeting, and this was followed by the minutes of the adjourned general meeting of 21st March last. Then followed correspondence from various gentlemen regretting inability to be present. These preliminary matters being disposed of, the Secretary proceeded to read the report of the Executive Committee, as follows:—

REPORT OF THE EXECUTIVE COMMITTEE.

The close of the year 1898 finds the National Chrysanthemum Society still at the head of those societies having for their object the cultivation and exhibition of some particular flower. In common with kindred societies the N.C.S. can look back upon a year's operations in which it has maintained its prestige, and its hold upon the Chrysanthemum-loving community. Despite the incidence of a summer and early autumn characterised by a prolonged drought, and at times great heat, which gave

occasion for forebodings on the part of growers for exhibition; the Shows of the Society were well maintained, the competitors were numerous, and the blooms if lacking the fine finish seen in previous years were yet of a high order of merit. In all the departments of the November exhibition the classes were well filled, while the special prizes offered by various firms for vegetables, both at the October and November shows, brought excellent collections. All the exhibitions of the Society have been well attended, testimony being thus borne to the continued popularity of the "Golden Flower."

Your Committee are gratified in noticing evidences of a revival of interest in the incurved type, which is shown by the large number of new varieties introduced during the past few years, and particularly so during the year just closed. These new introductions, some of them apparently of cross parentage, have been vigilantly examined by the Classification Committee; and those showing decided evidence of possessing characteristics of the approved incurved type admitted to that section. Some of doubtful character are reserved for another season's experience.

afforded the members of the National Chrysanthemum Society in obtaining refreshments at moderate charges.

Acting upon an instruction passed at the last annual meeting of members, a special Sub-Committee was appointed to visit halls and other places in London, and its suburbs, with a view of ascertaining what conveniences could be offered for holding the exhibitions of the Society elsewhere than at the Royal Aquarium, and upon what terms. This Committee spent considerable time in visiting buildings, and made a searching investigation as to the facilities they afforded, with the result that they recommended the Executive Committee to transfer their shows to the Crystal Palace, Sydenham. Your Committee, while fully sensible of the advantages of greater space and clearer light afforded by day at the Crystal Palace, yet thought it expedient to retain their exhibitions at the Aquarium in 1899, especially as they had the prospect of increased monetary assistance from the directors.

Large numbers of new varieties of Chrysanthemums have been submitted for examination at the meetings of the Floral Committee, and

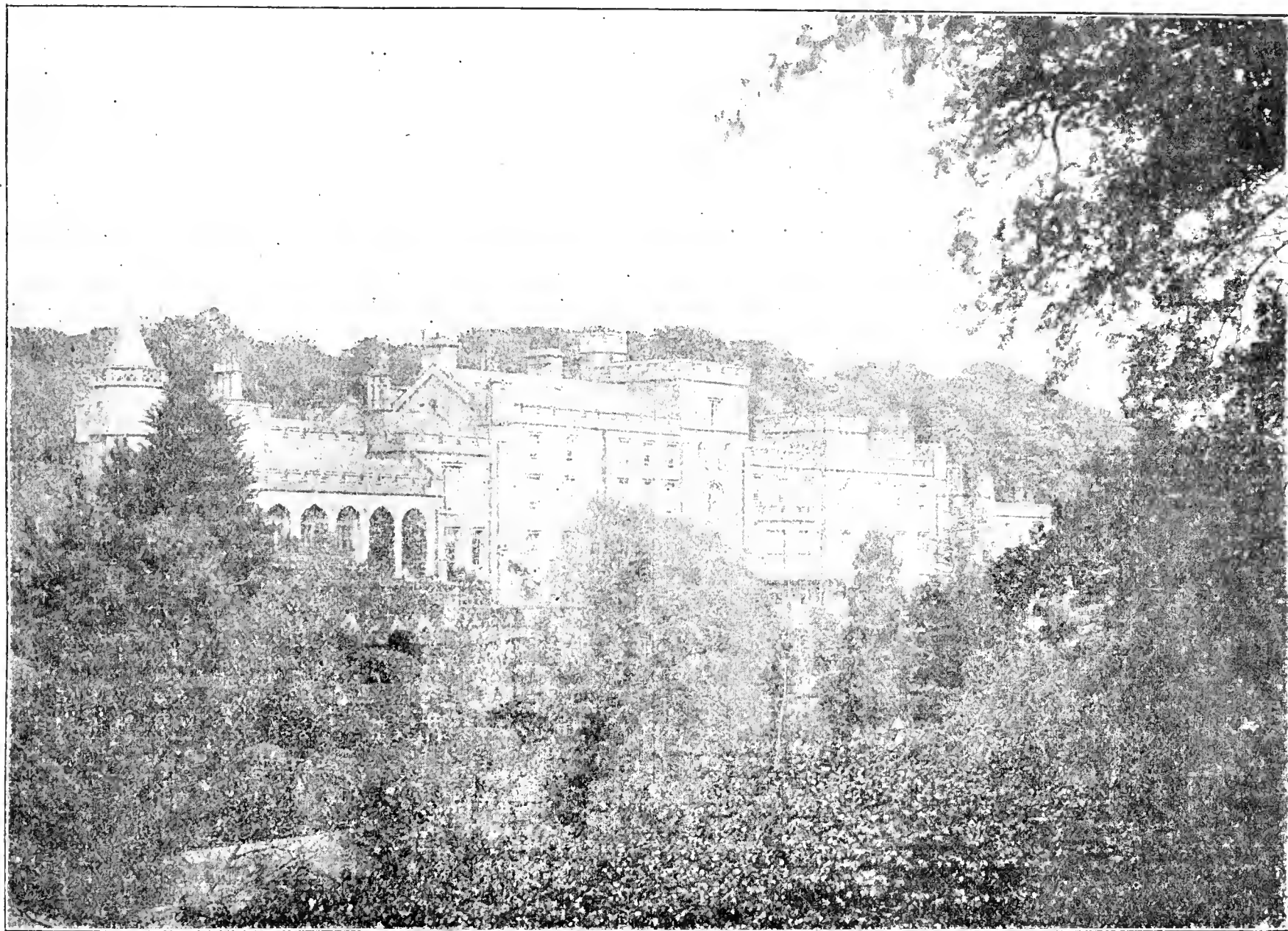


FIG. 23.—BIEL HOUSE. (See page 107).

Your Committee, fully alive to the fact that some of the newer introductions of the incurved section so nearly approach the older varieties in character as to render it difficult at times to determine their difference, instructed the Classification Committee to draw up a list of too-much-alike varieties, which was published in the schedules of prizes for 1898, and made obligatory upon exhibitors at the Society's shows. Finding that some affiliated societies felt themselves bound to act under this list, while some held they were at liberty to adopt it or otherwise, your Committee have had the list of too-much-alike varieties, together with a list of the incurved, classified during the past three years, put in the form of a special circular, which is to be sent to affiliated societies. In this circular they are urged to adopt the list and publish it in their schedules of prizes as binding upon their exhibitors. The adoption is optional, but it is believed many societies will decide to come under the operation of the list of too-much-alike varieties.

Your Committee have to report that they have entered into an engagement with the directors of the Royal Aquarium to hold their exhibitions in that building during the present year; the directors undertaking to give an additional sum of £75 towards the prize schedule of the November show. They have materially improved the lighting of the building, and successfully brought their influence to bear upon the new refreshment contractors, with the result that better facilities will in the future be

their qualifications for certificates of merit fully and impartially considered. The record of awards is a numerous one, despite the utmost vigilance on the part of the Committee. It has been found advisable to change the day of meeting on other than show days from Monday till Wednesday, excepting the meeting in the second week of November, which will be held on Monday the 13th.

The publication of a supplemental catalogue is becoming a necessity, as new varieties are frequently produced. This matter will be fully considered by your Committee at an early meeting.

A conference on the Chrysanthemum rust—a fungoid growth which proved very troublesome to many growers last season—was held in the St. Stephen's Hall of the Royal Aquarium on October 12th, and proved an exceedingly interesting function, and the attendance of members was large. Papers from the cultivators' point of view were read by Messrs. P. Waterer and W. Wells, and one on the scientific aspects of the rust by Mr. George Massee, of the Royal Gardens, Kew. The gathering had its advantageous social aspect also: the bringing together of the members of the Society on such occasions is a decided advantage. The papers, together with the discussion which followed, will be given in the annual report, &c, in course of preparation. The Committee are under a debt of obligation to the directors of the Royal Aquarium for the use of St. Stephen's for the purposes of the conference.

The annual dinner of the Society, held on November 30th at the Holborn Restaurant, afforded an opportunity for the attendance of ladies, and the sex was somewhat largely represented. It is an innovation which gave general satisfaction. Sir Albert K. Rollit, M.P., who presided, discharged the duties of Chairman in a manner which greatly enhanced the enjoyment of the large company. It is difficult for your Committee to give adequate expression to the sense of their obligation to Sir Albert Rollit for his ready acceptance of their invitation to preside, for his geniality, and perfect after-dinner speeches.

During the past summer your President and Lady Saunders celebrated

their golden wedding, and the hearty congratulations of the members were duly conveyed to them. The warmest thanks of the Society are due to Sir Edwin Saunders for his continued interest in the Society, and for so generously giving the first prizes in the classes in which the Holmes Memorial Cups are offered; to the directors of the Royal Aquarium for their special commemoration prizes, and to all others who in this helpful way enabled some new features to be introduced to the schedules of prizes.

The financial statement and balance-sheet having been printed and circulated among the members prior to the meeting, it was not considered necessary to read it in detail, but was taken as read.

N.C.S. BALANCE SHEET, 1898.

Dr.	RECEIPTS.				
To cash in bank at last audit	£38	16	2
„ Drawn from reserve fund as per minute dated March 7th, 1898	47	15	4
			<u>£86</u>	<u>11</u>	<u>6</u>
To annual subscriptions—					
608 at 5s.	£152	0	0
13 „ 10s.	6	10	0
23 „ 10s. 6d.	12	1	6
83 „ 21s.	87	3	0
1 „ 30s.	1	10	0
4 „ 42s.	8	8	0
1 „ 63s.	3	3	0
			<u>£270</u>	<u>15</u>	<u>6</u>
„ Foreign members' subscriptions	7	11	1
„ Donations and special prizes	117	5	0
„ Royal Aquarium Company—					
October Show	£ 75	0	0
November Show	175	0	0
Special prizes	30	0	0
December Show	50	0	0
			<u>£330</u>	<u>0</u>	<u>0</u>
„ Bill posting as per contra	10	13	2
„ Entrance fees and rent of space	66	9	0
„ Affiliated Societies' fees	62	4	6
„ Affiliated Societies' medals, certificates, &c.	66	11	3
„ Sale of catalogues	4	14	5
„ Sale of tickets	18	9	0
„ Advertisements in schedule	27	3	0
„ Overpaid prize money returned	1	10	0
„ Reserve fund...	4	4	8
			<u>£987</u>	<u>10</u>	<u>7</u>

	EXPENDITURE.				Cr.
By payments per authority of Committee minute dated March 7th, 1898					
„ Biggs & Co.	£ 0	10	0
„ J. A. Restall, balance of account	41	16	0
„ „Middlesex County Times,” balance of account	1	17	6
„ H. M. Pollett & Co., balance of account...	42	8	0
			<u>£86</u>	<u>11</u>	<u>6</u>
By prizes—September Show	£ 5	15	0
October „	87	15	0
November „	318	11	6
December „	55	10	6
„ Medals awarded and engraving	73	13	0
			<u>£541</u>	<u>5</u>	<u>0</u>
„ Prize money outstanding	1	4	0
„ Medals and engraving, affiliated societies, &c.	49	11	3
„ Advertisements in Horticultural Press	12	10	0
„ Bill posting, as per contra	10	13	2
„ Cartage	4	10	0
„ Expenses of annual dinner...	8	3	6
„ Expenses of Floral Committee	3	4	9
„ Foreign Corresponding Secretary's account	1	12	0
„ Hire of rooms...	7	18	0
„ Judges' fees	23	2	0
„ Judges', floral and staff luncheons	24	6	10
„ Petty cash—Postages	£39	1	0
Telegrams	1	18	4
Carriage of parcels	1	19	7
Travelling expenses, &c.	5	16	6
			<u>£48</u>	<u>15</u>	<u>5</u>
„ Printing	54	2	9
„ Stationery	14	12	11
„ Show expenses	25	12	9
„ Royal Aquarium, charge for tickets	9	5	0
„ Donation to Royal Aquarium employés...	2	2	0
„ Illuminated address and framing	3	17	6
„ Expenses of Investigation of Sites Committee	1	19	0
„ Expenses of Conference	3	7	0
„ Insurance premium...	0	7	6
„ Commission, obtaining advertisements	2	7	6
„ Sundry expenses	6	13	11
„ Secretary's salary	100	0	0
„ Clerical assistance	2	19	6
„ Transferred to reserve fund, as per contra	4	4	8
„ Bank charges...	1	1	9
„ Cash at bank...	18	0	11
			<u>£987</u>	<u>10</u>	<u>7</u>

N.C.S. BALANCE-SHEET, 1898—RESERVE FUND.

Dr.	RECEIPTS.				
To Balance on deposit account	£100	0	0
„ Balance on current account	6	13	1
„ Amount returned from general account not required...	2	4	8
„ Proceeds of smoking concert	8	9	5
„ Interest on deposit receipt	0	19	11
„ Transferred from general account	4	4	8
			<u>£122</u>	<u>11</u>	<u>9</u>

	LIABILITIES.				
To „Middlesex County Times”	£0	4	6
Balance of assets over liabilities	173	1	11
			<u>£173</u>	<u>6</u>	<u>5</u>

	EXPENDITURE.				Cr.
By Withdrawn from deposit for general account as per minute March 7th, 1898	£50	0	0
„ Balance on deposit account	£50	0	0
„ Balance on current account	22	11	9
			<u>£122</u>	<u>11</u>	<u>9</u>
	ASSETS.				
By Balance on general account	£18	0	11
„ Balance on deposit account	£50	0	0
„ Balance on reserve current account	22	11	9
			<u>£72</u>	<u>11</u>	<u>9</u>
„ Arrears, members' subscriptions	10	15	0
„ Arrears, affiliation fees	8	18	6
„ Due for medals	4	4	0
„ Due for advertisements	5	5	0
„ Due for space...	19	18	0
„ Due for tickets	1	9	0
			<u>£50</u>	<u>9</u>	<u>6</u>
„ Tickets (86) in hand at cost price...	2	3	0
„ Medals in hand	12	0	0
„ Jubilee catalogues in hand...	9	5	0
„ Year Books in hand...	0	6	3
„ Various properties at the Royal Aquarium	6	5	0
„ Certificates, cards, stationery, books, &c.	2	5	0
			<u>£32</u>	<u>4</u>	<u>3</u>
			<u>£173</u>	<u>6</u>	<u>5</u>

Audited and found correct { A. E. STURBS.
JOHN R. CHOLMELEY. January 20th, 1899.

Before any discussion took place the Chairman reminded the meeting that he had not been in close touch with the doings of the Society for several years, and when asked to occupy the post he first thought he was hardly fitted on that account to occupy it, but upon consideration he

thought his very freedom from close contact with their work might make him the most independent of chairmen, especially as the agenda showed that there might be some knotty points for discussion. He then commented briefly on the critics, and reminded them that all

criticism is not unfriendly; he also alluded to various items in the balance-sheet. There was nothing to be brought forward that could not be discussed, and he hoped the speakers would keep to the point, and say what they wanted in speeches as short as was consistent with their ideas.

Mr. W. Seward proposed, and Mr. Outram seconded, the adoption of the report and the accounts as submitted.

Mr. Moorman, comparing the accounts with those of the previous year, felt proud of the balance-sheet placed before them, and thought no one could charge them with extravagance. Among other things, he thought that some reference in the annual report should be made of the report submitted by the Sites Committee, and this was subsequently arranged to be done by the insertion of a paragraph in the report. Mr. Dean, replying to several of Mr. Moorman's queries, showed that a large proportion of arrears had come in since the accounts had been made up. When put to the vote the report and accounts were carried unanimously.

A vote of thanks was then carried for the way the auditors had vouched the accounts, and Mr. Stubbs, the retiring auditor, replied, expressing the hope that they might never be less favourable than this year.

Elections of officers next followed, with the following results:—President, Sir Edwin Saunders. Treasurer, Mr. T. Wilkins. Chairman of Committee, Mr. P. Waterer. Vice-Chairman, Mr. T. Bevan. Secretary, Mr. R. Dean. Foreign Secretary, Mr. Harman Payne. Auditor, Mr. Berridge. One-third of the Committee retiring in turn resulted in a large number of nominations, the following gentlemen being elected, with the number of votes each one obtained:—Mr. E. Beckett, 107; Mr. C. Gibson, 100; Mr. H. J. Jones, 98; Mr. A. Outram, 97; Mr. D. B. Crane, 95; Mr. Davey, 94; Mr. Kenyon, 81; Mr. T. W. Wilkinson, 78; Mr. J. McKerchar, 73; Mr. C. Blick, 70; Mr. Simmons, 62; Mr. A. Wright, 61; Mr. G. Walker, 54; Mr. Sturrock, 52. Four Scrutineers—viz., Messrs. W. Seward, Pinches, Holmes, and Weeks—were appointed to conduct the ballot.

Upon the motion of Mr. Moorman it was resolved to add the name of Mr. T. W. Sanders to the list of Vice-Presidents.

The proposed alterations to rules then followed, the only substantial alteration being in rule ix, which now gives definite authority to delegates of affiliated societies to vote at general meetings. Representatives of affiliated societies strongly urged the importance of this, Messrs. Rundell, Broughton, and several others maintaining the claim.

PROPOSED ALTERATIONS OF RULES.

The following additions, &c., to the Rules, of which notice had been given, were considered:—

II. OBJECT OF THE SOCIETY.—The special object of the Society shall be to promote the cultivation of the Chrysanthemum—(1) by means of exhibitions; (2) by awarding certificates of merit and medals at the exhibitions of the Society and the meetings of the Floral Committee; (3) by the publication as necessary of an official catalogue of select cultivated varieties for the guidance of Chrysanthemum growers in matters of classification and nomenclature; and by such other means as the Committee may from time to time see fit to adopt.

Alterations proposed by Mr. W. Wells.

Rule II.—Second line, delete "promote," substitute *encourage*.

Third line, after medals, add, *to Chrysanthemums only, and which have been grown by the exhibitor, or exhibitors*. Lost.

III. MANAGEMENT.—The management of the Society shall be vested in the officers of the Society—viz., a President, Vice-Presidents, Treasurer, Chairman, and Vice Chairman of the Executive Committee, a Foreign Corresponding Secretary, and an Executive Committee of thirty-six members, and the representatives from affiliated societies in accordance with section 1 of Rule X. The President, Treasurer, Chairman, Vice-Chairman, and Hon. Foreign Corresponding Secretary shall be *ex-officio* members of the Floral and all Sub-Committees. At all meetings of the Society and Executive Committee nine persons shall form a quorum for the transaction of business, and three persons at all meetings of Sub-Committees.

Additions proposed by Mr. R. Dean.

Rule III.—Third line, add after Foreign Corresponding Secretary the words, *and General Secretary*. Seventh line, add after Foreign Corresponding Secretary the words, *and General Secretary*. Withdrawn.

IV. MODE OF ELECTION.—The President, Treasurer, Chairman, Vice-Chairman, a Hon. Foreign Corresponding Secretary, and a General Secretary shall retire from office annually, but shall be eligible for re-election; any member may nominate a candidate or candidates to any of the foregoing offices. One-third of the members of the Executive Committee shall retire annually, but shall be eligible for re-election provided they have made four attendances during each year of office; the retiring officers and members of the Committee shall be considered as nominated, if eligible, unless they have expressed to the Secretary in writing within fourteen days of the annual meeting their intention to retire. The votes of the members present at the annual meeting shall be taken by means of voting papers, on which shall be the names of the retiring officers and Committee, and be collected and counted by Scrutineers appointed by the meeting.

Addition by Mr. W. Wells.

Rule IV.—Tenth line, after "The votes," to read, *to be taken by means of voting papers which shall be sent to every member who has paid his subscription seven days previous to the annual meeting, containing a list of all matters upon which their vote is required; the same duly filled in to be returned to the Secretary three days before the annual meeting*. Lost.

IX. PRIVILEGES.—All Fellows and members shall be entitled to vote at the general meetings of the Society. Fellows shall be entitled to four passes; members subscribing half-a-guinea to two passes; and those subscribing 5s. to one pass, to all the Society's exhibitions and meetings of the Floral Committee.

Amendment recommended by the Executive Committee. Mr. Taylor seconded.

The first line to read, *Fellows and members only shall be entitled*.

Lost.

Rule IX.—Although the proposed amendment was lost, an amendment was carried by which it now reads: "All Fellows, members, and delegates of affiliated Societies only shall be entitled to vote," &c.

PRIVILEGES, 1.—To appoint one of its members as a delegate to the Executive Committee of the National Chrysanthemum Society, with power to vote at all meetings, unless otherwise specified.

Amendment recommended by the Executive Committee.

First line after "its," delete "members," and add, *bona fide subscribers*. Carried.

Rule X. CONDITIONS, 1.—That the Society's medals and certificates be awarded only to classes for plants of cut blooms of Chrysanthemums, and that all inscriptions be recorded thereon before being handed to the winners.

Amendment by Mr. Wells.

That the Society's medals and certificates be awarded only to classes (or miscellaneous exhibits), which have been grown by the exhibitors, or been in his possession for at least three months. This condition shall also apply to exhibitors at the National Chrysanthemum Society's shows, and that all inscriptions, &c., &c. Lost.

XII. EXHIBITIONS.—The exhibitions of the Society shall be held at such times and places as the Executive Committee may from time to time determine; and the most recent issue of the Society's catalogue and the latest report of the Classification Committee published in the last annual report or year book shall be the standard work of reference in all questions of classification and nomenclature that may arise thereat. The money prizes, medals, or other awards won by exhibitors at any of the exhibitions shall be delivered to the winners thereof within thirty-one days from the date of such. The Executive Committee shall make such regulations as may be deemed necessary for the orderly management of the exhibitions, and shall have power to alter or amend such regulations whenever it may be deemed desirable.

Alteration proposed by Mr. W. Wells.

Rule XII.—Seventh line, delete "won by," and substitute *awarded to*. Lost.

XIV. SCHEDULE REVISION COMMITTEE.—A Sub-Committee of the Executive Committee, consisting of nine members with the officers *ex-officio*, shall be appointed to revise the schedule of prizes and nominate Judges, and report the same to the Executive Committee for approval.

Amendment recommended by the Executive Committee, and seconded by Mr. D. B. Crane.

Third line, after "appointed" add, *at the first meeting of the Executive Committee held after the annual general meeting*. Carried.

XV. JUDGES.—Judges at the various exhibitions shall be appointed by the Executive Committee, but only the elected members and *ex-officio* officers can vote for the same.

Amendment recommended by the Executive Committee. Mr. Moorman seconded.

Add to third line, *The votes shall be taken by means of voting papers*. Carried.

Addition proposed by Mr. W. Wells.

XV.—Add at end, *No Judge to be a member of any Committee of the National Chrysanthemum Society*. Lost.

XVII. THE ACCOUNTS OF THE SOCIETY.—The accounts of the Society shall be kept by the Treasurer and General Secretary, and be closed on the 31st of December. All moneys shall be deposited at a bank to the account of the Society, and all accounts be passed by a Finance Sub-Committee, consisting of the *ex-officio* officers and three members of the Executive Committee, and paid by cheque which shall bear the signatures of the Treasurer and General Secretary. The accounts of the Society shall be audited prior to the annual general meeting by two competent persons appointed at the preceding general meeting, and the said accounts shall be printed and issued to the members at least seven days previous to this meeting. No Auditor shall hold office longer than two years consecutively. The Executive Committee shall determine annually the amount of salary to be paid to the General Secretary.

Amendment recommended by the Executive Committee, and seconded by Mr. Moorman.

Fifth line, after "Treasurer and General Secretary" add, *such Sub-Committee shall be elected annually after the first meeting of the Executive Committee held after the annual general meeting*. Carried.

Amendment by Mr. W. Wells.

Seventh line, insert, *together with any proposition made for altering the rules, or any new members who have been proposed prior to that date*. Lost.

New rule proposed by Mr. W. Wells.

XX. *The Secretaries' duties, &c.*

This was irregular in form and could not be received.

New members were elected, and three Societies—viz., Taunton Dean, Totter, and Blackburn—were admitted in affiliation. This concluded the business, and, replying to a vote of thanks, the Chairman complimented the meeting on the way the proceedings had been carried through.

AUSTRALIE AND MR. T. CARRINGTON.

THE Classification Committee of the N.C.S. has bracketed these two varieties as being either "synonymous, or too-much-alike," which is surely an error. In spite of the classification, Mr. T. Carrington will forge for itself a reputation, and will occupy a prominent position. It is quite distinct from *Australie*, both in colour and form. The former is richer and clearer, the florets are smoother and more even, and they are less whirled, and no judge could have the least trouble in noticing a difference between these two.

They are much more distinct than *Pride of Madford* and *Duke of York*, or *Mrs. Mease* and *G. J. Warren*; in fact, a bloom from an early bud of the latter could easily be shown as *Mrs. Mease*, and without doubt has been done with success. Of course I do not argue that *G. J. Warren* and *Mrs. Mease* should be bracketed as too-much-alike, but that *Australie* and Mr. T. Carrington are distinct.—W. J. GODFREY.

CAN IT BE TRUE?

THE other day a leading morning paper recorded the wind-up of the affairs of a suburban *Chrysanthemum* society, which took place prior to disbanding. The failure of a *Chrysanthemum* society at all is something novel, but the decision arrived at by the members of this particular body may sound even more astonishing. It was to the effect that they were of the opinion that the *Chrysanthemum* craze is on the wane and the public popularity of the flower declining. I wonder what the champions of the autumn queen have to say to this? It may be only the pessimistic cry of an unsuccessful society, who attribute the failure to the change of public taste. Be that as it may, the announcement was boldly made, and will, perhaps, lead many to wonder whether the reign of the autumn queen is approaching its end. *Dame Fashion* is fickle, and takes unlooked for courses sometimes.—G.

CATALOGUES AT SHOWS.

IN reference to your report of the shows and meetings of the People's Palace Horticultural Society (page 93), I desire to say that, while I wish all success to the Society, I am bound to protest against the action of the Secretary or judges, under the following circumstances:

I was asked to favour the show with an exhibit "not for competition." I sent six dozen cut blooms, and, as is customary at shows generally, my representative placed some of my catalogues by the side of the exhibit for the people to take. When the judges came to them the catalogues were at once thrown under the table and not allowed to be distributed. The Society is affiliated with the N.C.S., and the judges, as stated in your report, were Messrs. R. Ballantine, R. Dean, and T. W. Sanders.

I have written to Mr. C. E. Osborn, the Secretary, and as I cannot get a satisfactory answer, I now publicly ask the Committee if they sanction such an extraordinary proceeding as I have described? I, with other non-competitive exhibitors, have distributed catalogues at most of the best shows in the kingdom, and this is the only instance known to me of such summary action.

I should like to know who threw my catalogues under the table, and why? Also if any exhibitor, who was invited to assist a show, has ever been similarly treated before?—W. WELLS, *Earlswood*.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

ON Wednesday, the 1st inst., the annual meeting of this Society was held, when a large number of the members testified their interest in the Society by attending to take part in the election of the Committee and other officials for the current year. Mr. John G. Newsham was elected to the chair, and commenced the business by calling upon the Secretary to read out the statements of accounts which had been previously passed by the auditors.

Favourable weather (for November) at the last show, which was, as a whole, much better than previous ones, brought a large number of visitors together, and resulted in increasing the funds of the Society, and the balance of cash in the bank and the Treasurer's hands is £24 more than at the corresponding date last year. The Society is financially and numerically in a better position than it has ever been since its foundation. Its cash balance is now £70 12s. 4d., with a reserve fund of £50 13s. 9d. In consequence of the uncertainty of the weather at the time the Society's shows are held, it is considered advisable to further increase the reserve fund to provide for the proverbial "rainy day," which it is, however, hoped will not put in an appearance for a long time to come.

C. E. Jeffcock, Esq., the popular President of the Society for some years past, has thought it advisable, in consequence of removing from Sheffield, to resign the presidency, and in future take up a position amongst the V.P.'s. The alteration was greatly regretted by the Society. W. A. Milner, Esq., J.P., of Totley Hall, was unanimously elected President in the place of Mr. Jeffcock. Mr. Milner, of Daffodil fame, who has always taken a great interest in the Society, will be a most valuable and popular gentleman to be at the head of

the officials, who are fortunate in being able to get him to accept his present position.

With two exceptions in the Committee the whole of the other officials were re-elected. The annual dinner will take place on the 18th inst. in the Masonic Hall. The proceedings terminated with a vote of thanks to the Chairman.—J. H. S.

SWEET PEAS.

How popular these flowers have become is indicated by the collections, trade and otherwise, seen at summer shows. The prizes given in competition for bouquets, stands for effect, and dinner-table decorations at Shrewsbury and elsewhere are encouraging, and as the flowers can be grown by the cottager as well as by gardeners they have become highly popular. No flower lends itself better to a greater variety of uses than these, and what a range of colour!—from purest white to deepest purple in every shade imaginable.

As the time approaches when cultivators are busy laying plans for seed sowing, a few hints may be acceptable on growing Sweet Peas. Where early flowers are needed, it is usual to sow in October; but if a few seeds are mixed with soil thickly, and kept moist in a warm house, they will soon be on the move; gradually harden before transplanting, or the reaction in consigning them direct to the ground would be injurious. A trench should have been prepared on a south border or in a warm nook, with well decayed manure as a base. Over this place some old potting soil, or any such mixture that is light and fairly dry. Level down, and then carefully sow the mixture of sprouted Peas and soil together thinly over the width of the trench, covering with about 2 inches more of the old potting soil. The plants will soon be through, and as the sides of the trenches are considerably higher than the growing Peas, these will be sheltered from the keen March winds.

I do not favour dense shelter, such as Yew or Fir boughs, in too close proximity to the Peas, as these must necessarily cause them to grow spindly; rather use in preference a few well twigged tops of Hazel boughs rather thickly, and, where possible, use new sticks, as the plants never take so kindly to old ones as to these. It is half the battle to encourage free early growth. For later crops the sowings should be made at an interval of six weeks, say early in March and late in April, in prepared trenches in the open. Sow thinly, and allow each plant full scope for development; otherwise, instead of having finely developed flowers on long stalks, they would, on the contrary, be short-stalked, bearing at best pairs of undersized flowers only.

Nothing pays better for liberal treatment than the Pea tribe. In dry periods good waterings are necessary, using either diluted liquid manure or some fertiliser, such as soot, in moderation, the rows to be afterwards mulched with short manure. A cooler situation is advised for the last sowing, or the plants suffer considerably from heat and drought in dry summers. When wanted for embellishment the flowers need cutting early in the morning, as they retain their freshness much longer.

Birds, mice, and weevils are enemies of the plants, and need watching and guarding against. Especially does this apply to the first sowings, when food in the form of green stuff runs scarce.

As regards varieties, these are too numerous to particularise. With American introductions, such as *Blanche* and *Sadie Burpee*, the selection may be both varied and beautiful.

A stand well set up of Sweet Peas mingled with light feathery Grasses, or the graceful inflorescence of *Gypsophila paniculata*, with *Smilax* or *Maidenhair Fern*, cannot be surpassed in beauty by the rarest Orchids. It is possible to secure a long continuation of the flowering period by keeping the pods closely picked off. A few seeds in 9 or 10-inch pots sown now and grown cool will give flowers a few weeks earlier than those treated outside, and are very effective.

I do not care for the dwarf Cupids, the flowers drop so soon after opening, besides the plants being somewhat miffy. I should be glad to know if that is the general opinion of cultivators who have tried the pigmies, which I do not consider worthy of space in the garden.—A MIDLAND GARDENER.

BIRMINGHAM GARDENERS' ASSOCIATION.

THE thirteenth spring session of this Society was inaugurated on the 30th ult. by a fairly well attended meeting of the members to listen to a dissertation by Mr. John Pope, F.R.H.S., King's Norton, entitled "Discussion on Pots, Potting, and Soil Mixtures." The subject embraced detailed description of the shapes, quality, and sizes of pots, also glazed versus soft or porous pots, the former being much affected by *Auricula* growers especially. Potting and soil compounds were also dealt with at considerable length; and concerning the act of rapid potting, the lecturer instanced the fact that once when on a visit to America, the late Mr. Peter Henderson informed him that one of his men, for a wager, undertook to pot 7000 bedding plants, chiefly *Verbenas*, out of the propagating

house in the average day's work, and which he duly accomplished, but the exertion was so great that he had to rest for a day or two afterwards.

In the discussion which followed, one "old expert" remarked, relative to glazed pots, that when serving, upwards of forty years ago, under the late Mr. George Fleming at Trentham Hall Gardens he was placed in charge of the Pelargonium houses, and which plants were most successfully grown in glazed pots or pans, likewise stove plants. The pots were manufactured at the instance of her Grace Harriett, Duchess of Sutherland, by the firm of Minton & Co., Stoke-on-Trent, the Duchess being an enthusiastic patron of the art of pottery, especially in regard to the style indicated, and including encaustic and other ornamental tiles suitable for balconies and window boxes. Examples of specimen plants grown in glazed pots were exhibited by Mr. Fleming at one of the Royal Horticultural meetings, as evidence of the suitability and ornamental character of the pots in preference to the ordinary clay commodities. At the close of the discussion several new members were enrolled, whilst the Society's invaluable lending library was also laid under more than ordinary contribution.—W. G.

WRIGHTIA ZEYLANICA.

THIS plant is very effective when in bloom, but it does not seem to be generally cultivated in gardens. It is a member of the same family as the Vincas, the Allamandas, the Oleanders, and the Tabernæmontanas, and to the last named the flowers bear some resemblance. These are pure white, the corolla five-lobed, with a peculiar irregularly cut corona-like appendage at the base of the lobes, such as is seen in other related plants. The general form of the flowers and leaves is shown in fig. 24. *Wrightia zeylanica* requires a stove temperature, and being of loose habit, though not a climbing plant strictly speaking, it succeeds best trained to the roof of a house. A compost of turfy loam and peat or leaf soil and good drainage are requisite whether it be planted out or in a pot.

THE GARDENERS' ORPHAN FUND.

AS Mr. D. T. Fish expresses on page 85 so strong and so sincere an interest, amounting to anxiety, a feeling that is no doubt very widely shared by subscribers generally, and especially in the provinces, in the Orphan Fund, I ask leave to mention how matters stand in relation to the vacant office of secretary, as was the subject of common conversation at the Drill Hall last week, and might well be regarded as an open secret. If I imagined that any harm would result to the Fund I would not now have told of these matters, but honestly believing that it is best subscribers generally should know, and as soon as possible, no excuse otherwise is needed. It may be as well to tell Mr. Fish that whilst there can be no doubt his great interest in Mr. Barron and the office is warmly reciprocated by the latter, yet it is not a case that could be in any way got over by the measures he refers to. Mr. Barron has not resigned without good reason, though it be a reason all must regret. Still we all grow older and feebler with advancing years, and no amount of determination can stay the hand or the effects of Time.

But when it is understood that something over 200 persons applied for the reversion of the office, it is evident that there are no lack of candidates willing to assume the duties of secretary. These were reduced at the first sitting of the Selection Committee to a manageable number, and at a second sitting were reduced to six, the whole six being capable and suitable men. But the Committee had resolved to recommend to the general meeting of subscribers on the 17th one person only as the result of their examination into the merits of the whole. It was therefore important that any such selection should be of unanimous form, and after some voting over two or three names, the final selection, first by majority, and eventually unanimously, was made of Mr. Bryan Wynne, who is not an unknown person in relation to gardening, and especially with gardening literature, by any means.

Mr. Wynne was for many years on the staff of the "Gardeners' Chronicle;" then he started, in conjunction with others, the "Gardening World," and now he conducts a small, but apparently flourishing, trade advertising paper. He was for some time a member of the National Chrysanthemum Society's executive, and for a year or so Chairman of that body. His connection with the Orphan Fund is of the earliest, having from its formation been a member of the Committee, and can claim to have attended more meetings than any other member. He has probably more complete knowledge of the working of the Fund than has any other candidate, and has for several years rendered to Mr. Barron unstinted and valued help. He is not yet of advanced age, and may reasonably look forward to giving to the Fund some fifteen to twenty years of service.

Naturally those are regarded as important elements in his case that have been fully weighed by the Committee. Certainly they could not have been ignored. His selection should be as acceptable to the market trade, whose candidate was in the running a very strong one, as to the nursery trade, and to gardeners in general, as he holds a somewhat intermediate position in relation to all; but is the son of a gardener, has been a gardener himself, and is now in warm and complete sympathy with gardening in all its forms. Of course the presentation of Mr. Wynne's name to the general meeting on the 17th by the Committee does not elect to the office; that has to be done by the votes of the subscribers present, and I hope it will be the earnest desire of subscribers, having the future

prosperity of the Fund at heart, to attend at the meeting, and support the candidate thus selected by the Committee.

There is good reason to believe that there will be no opposition at the meeting. Still there is no telling what may happen, and every well-wisher to the Fund should attend, if possible, for the purpose indicated. It seems very probable that possible troubles to the Fund were anticipated had a market man, however competent, been selected, as already there is far too much coldness, on the part of gardeners generally, towards the Fund, and had such selection been made the result might have been little less than a calamity. Seeing that the Fund was originally promoted by and for the benefit of private gardeners, it is but right that its control should be largely in their hands and exercised in the interests of their



FIG. 24.—WRIGHTIA ZEYLANICA.

orphans, admitting at the same time that market men have given to the charity valued service and support.—TELEPHONE.

[In our opinion no man has given more devoted service to the Fund—and we speak from experience during the early years of its career—than has Mr. Wynne, while no one can question his capacity for the position for which he is authoritatively recommended. A unanimous vote will be of advantage to the charity.]

TRADE CATALOGUES RECEIVED.

- W. Atlee, Burpee & Co., Philadelphia.—*Wholesale Seed List.*
- Bruant, Poitiers.—*New Plants.*
- W. Clibran & Son, Altrincham.—*Chrysanthemums.*
- J. Cocker & Sons, Aberdeen.—*Seeds and Plants.*
- J. Dicks & Co., 66, Deansgate, Manchester.—*Seeds.*
- R. & J. Farquhar & Co., Market Street, Boston, Mass.—*Seeds.*
- Jadoo, Ltd., Exeter.—*All About Jadoo.*
- H. J. Jones, Ryecroft Nurseries, Lewisham.—*New and Choice Plants.*
- J. R. Pearson & Sons, Chilwell.—*Zonal Pelargoniums.*
- C. R. Shilling, Winchfield.—*Seeds.*
- A. F. Upstone, Rotherham.—*Seeds.*
- Louis Van Houtte, père, Ghent.—*Plants.*
- Webb & Sons, Wordsley, Stourbridge.—*Farm Seeds.*

THE YOUNG GARDENERS' DOMAIN.

GOLD PENMEN.

WE have once more to undertake the pleasant task of announcing the successful writers in the Young Gardeners' Domain. They are two—namely, Mr. T. Payne, late of The Gardens, Luton Hoo Park, Luton, and Mr. S. Smith, The Gardens, Ruxley Lodge, Esher, both of whom by persistent effort secured the requisite number of marks. The subjects with which they have from time to time dealt have been broadly diversified, and have evidenced not only creditable literary aptitude, but also thorough practical acquaintance with the various cultural details. We offer them our congratulations, and can affirm that they were not easy winners, for at least two others ran them very closely, and will with perseverance be likely to score before many more months have passed.

CUCUMBERS.

To obtain Cucumbers ready for use about the middle of April sow the seeds singly, without delay, in clean, well-drained thumb pots, filled with a compost consisting of equal parts of good loam, leaf soil, and sand, taking care not to cover too deeply. Give a good watering, but afterwards be sparing with it until the seedlings appear above the surface. Place the pots in a house, under hand-lights, affording a temperature of 65° to 70° by night, 70° to 75° by day, and when the plants are an inch in height remove them to a shelf near the glass with the same temperature as before. After the plants have made their first rough leaf, and have a fair amount of roots, pot as deeply as possible in 5½-inch clean, well-drained pots, in a compost of two-thirds fairly rough loam, and the remainder sweet horse droppings, with a little sand. Apply water if necessary, and placing a neat stake to each, keep as close to the glass as possible, as this does much to insure sturdy, short-jointed growth; shade for a few days if the weather is bright.

While the plants are growing the house, if empty, can be got in readiness to receive them. Thoroughly wash the glass and woodwork, removing old soil, if any, lime-wash the walls, and well clean the drainage. When this has been completed, turves which were cut last autumn should be placed on the drainage, grass side down, to prevent any fine soil getting amongst it. The compost which the plants are to fruit in should consist of two parts of loam cut up roughly, and the remainder sweet horse droppings, fine peat, and old lime rubble, with a slight sprinkling of bonemeal, thoroughly incorporated, and it must be placed in the house to become warmed, making it into hillocks, or a ridge the lengthway of the house, allowing room for future top-dressings. When the plants have a fair amount of roots, place them about 4 feet apart, but not too deeply, merely covering the top of the ball, and put a stake to each for support until they have reached the trellis. Afford a temperature of 65° to 70° at night, 70° to 75° by day, with a rise of 10° from sun heat; the bottom heat should be kept at 90°. After being planted it will be necessary to lightly shade for a few days from the sun.

Syringe the plants on bright days, mornings when the temperature reaches 75°, also at midday, and close the house, but in dull weather damping the paths and walls will be sufficient. Great care should be taken in ventilating. Do not admit any air until the house stands at 80°, avoiding cold draughts, as they are liable to stop the growth of the plants. Attend to the tying and stopping of the laterals regularly, removing male blooms with deformed and surplus fruit as they appear, leaving sufficient to keep up a supply. Red spider is rather troublesome, but frequent syringings will keep it in check. Fumigate about every fortnight for green and black fly, XL All vaporiser being a good thing to destroy them, but on no account overdo it. Keep the evaporating troughs charged with weak liquid cow manure. Attend to the watering, never letting the plants become dry. As the roots appear above the surface top-dress with compost as stated for planting, not adding more than an inch at a time.—P. R.

A PUPIL OF AN OLD BOY.

MOST readers of the Journal will remember the interesting series of articles contributed by "An Old Boy" during 1896. The excellent advice then given cannot have failed to benefit any young man who took the trouble to follow it out. I propose to speak of two or three of the suggestions made by him, and which, having adopted, I find of great advantage.

One of these—the keeping of a diary—is very useful. I jot down all the daily operations that come under my notice, and any other items that I wish to remember. These, together with the register of the barometer, maximum and minimum temperature, amount of rain, and general observations on the weather, form an interesting chronicle for reference on the corresponding date of the following year. Its use will at once be apparent, as one can then see whether he is forward or backward in his work, judging by the previous year.

Another subject the writer wished young gardeners to take up was drawing. He did not say what (if any) particular branch, but I think a general knowledge of the art is what is required. Being fond of drawing myself, much was not needed to urge its desirability. Freehand, model, light and shade, and design are my favourites; geometrical drawing and the like I find rather "dry," though perhaps it is the most useful.

Then "An Old Boy" recommended us to study botany—surely a large order; but I do not think he meant us all to be Lindleys and Hookers; that would take a lifetime, and more ability than many of us possess. What I think he meant was, that we should acquire such a knowledge of plant life as would help us in our work, of course extending the knowledge as much further as possible. I will just outline my *modus*

operandi, as it may possibly be of slight assistance to some who, like myself, are unable to attend a botany class, for the simple reason that there is not one held within reasonable distance. First, I wrote to the Journal, asking what book to get on the subject. The reply was, Sir J. D. Hooker's Elementary Botany, Science Primer, price 1s., published by Macmillan & Co., London. Next I bought a 7s. 6d. microscope, perhaps not the best adapted for the purpose, but still it has done good service in revealing the marvellously interesting inner life of vegetation. Then I read the book carefully through, but found it impossible to retain a tithe of the vast amount of information contained in that small volume. So procuring an ordinary exercise book, I began at the first page of the primer, and read it again, using the microscope as directed, and writing down all important points and scientific terms. By this means some of the elements of elementary botany are fixed in my brain. This may seem a crude system to many who have had the advantage of a teacher, but they must remember that I had no friend whose aid I could seek in the matter: true, I might have inquired of "our Journal," but somehow I did not think of it. We should judge by results, and I am sure that anyone, failing a proper teacher, who adopts this system, and works at it, will not begrudge the time spent. Some worthy men that I know would say that the above subjects are not necessary to make a good gardener, but that does not prove that the "good" gardener would not be a "better" if he were acquainted with them.

I wonder what they would say to a young man studying "physiography?" "Waste of time," they would exclaim; and so it might seem at first thought; but think again. Does not the science of physiography deal with the all-important elements with which a gardener has to contend—viz., the soil, the rain, and the weather? Is it possible for a man to know too much about what is so closely associated with his work? Then, again, our friend says that he has got on all right without knowing how the soil is formed, and what causes the rain and the changes of the weather. Perhaps so; but would he not be a better man for the knowledge? Would not the pleasure of life be deepened and intensified if he were able to trace this or that to its origin? And then "knowledge is power," as everyone will be prepared to admit.

I have a splendid book on this subject by T. H. Huxley, F.R.S., published by Macmillan & Co. I propose giving, with the Editor's approval, a few extracts that would, I think, interest and benefit readers of the "Domain." It touches on several of the sciences, geology, botany, chemistry, and astronomy; but not so deeply as to be incomprehensible to a fairly intelligent reader. "Physiography: an Introduction to the Study of Nature" is the title of the book. The fact that it is a study of Nature should recommend it to all gardeners, and supply the excuse (if any be required) for its mention in these columns. "An Old Boy" did not allude to this subject in his articles; but I feel sure he will readily grant what I have claimed for it.—ERICA.



FRUIT FORCING.

Cherry House.—The trees are now rapidly unfolding their buds, and will soon have a beautiful appearance. It is advisable to fumigate the house before the flowers expand, so as to make sure that the trees are free from aphides. The temperature should be maintained at 40° to 45° at night, and about 50° in the daytime regularly, a genial atmosphere being secured by damping the paths and borders occasionally. The house can hardly be too freely ventilated, subject to the temperature being maintained. If fresh trees are to be introduced they must be planted without delay, shading when the sun is powerful, and lightly sprinkling frequently to promote speedy re-establishment, surrounding surfaces also being well moistened.

Cucumbers.—Plants raised from seeds sown at the new year, and transferred from the small pots to the ridges or hillocks in the Cucumber house now or before, need not be stopped until they have reached two-thirds across the trellis. If the plants cannot yet be turned out into the fruiting quarters they may be shifted into larger pots, it not being a good plan to allow them to become cramped at the roots, and they must be transferred to the fruiting bed before these are much matted in the pots.

Winter Fruit.—The plants will be much benefited by top-dressings of fresh lumpy loam and sprinkling on a little fertiliser. Admit sufficient air in the early part of the day to insure a change of atmosphere. Maintain a night temperature of 65°, allowing 5° more when the external air is mild, and 5° less in the morning when the weather is severe; 70° to 75° by day artificially, and keep through the day at 80° to 85° or 90° from sun heat, always securing a good heat from an early part of the day, and if by early closing the temperature rise to 95° or even 100° it will benefit the plants. As the light and sun heat increase a greater supply of atmospheric moisture is needed, damping in the morning and early afternoon. Liquid manure once or twice a week will be required by plants coming into bearing; but avoid excessive soil moisture and stimulants. Thin the fruits well, remove superfluous growths, bad leaves, tendrils, and staminate blossoms, stopping the shoots one joint beyond the fruit, and in no case crowding or overcropping.

Melons.—In a Melon house a ridge the whole length of the bed, about 2 feet wide at the base, with the top flattened so as to give a depth of 10 to 12 inches, is preferable to hillocks, the soil being made firm. When warm the plants may be turned out, making the soil moderately firm about the roots and raising it a little higher than before, but not nearer than half an inch of the seed leaves. The plants can be placed about 2½ feet asunder, the leading or primary shoots being taken up without stopping until fully two-thirds of the distance they are intended to travel, then pinch out the point of each. Some varieties will show fruit on the first laterals; and, as early Melons are an important consideration, take out the point of each alternate one, the other on opposite sides of the leader being rubbed off whilst quite young at a joint above the fruit, but not until fertilised or artificially impregnated. The plants will require little water for a time; nevertheless, maintain the soil in a moist condition, avoiding anything approaching saturation. Sprinkle the paths and walls in the morning and early afternoon. Ventilate very carefully, avoiding cold currents of air, and keep the night temperature at 70°, 65° in the morning, or even 60° on very cold nights, 70° to 75° by day, rising to 85° or 90° from sun heat, and the latter to 95°, or even 100°, after closing; bottom heat to be kept steady at 85°.

Vines.—*Earliest in Pots.*—Vines started in November must be attended to, thinning directly the berries are set and removing surplus bunches early. The laterals beyond the bunches may be allowed to advance a joint or two at each development, but only foliage fully exposed to light profits the Grapes. Laterals behind the bunches should be closely stopped or removed where they interfere with the principal leaves. Top-dress with rich compost or well-decayed manure, and afford liberal supplies of liquid manure, not too strong. Where the pots are stood on brick pedestals with fermenting materials placed round the pots, the roots may be encouraged to extend by turves placed on the rims so as to form a dish, this being filled with rich material, and the roots, coming into the fermenting material, gather nourishment, which will greatly aid the swelling of the berries.

Early Houses.—Tie the shoots down carefully, not being in a hurry; but the points must not be allowed to touch the glass. Avoid crowding by leaving those growths only that can have full exposure to light, stopping the bearing shoots when two joints are made beyond the show for fruit and the leaf at the joint is the size of a halfpenny. If the space is small stop one joint beyond the bunch, pinching the laterals at the first leaf, and so on as made. Where there is room the bearing shoots may have three or more leaves beyond the bunch. The better foliage a shoot has the finer will be the Grapes. Laterals below the bunch may be removed where the space is limited, except from the two lowest leaves, pinching them at every joint. The great point is to secure well developed leaves fully exposed to light.

Vines in Flower.—The night temperature should be 65°, and 70° to 75° by day from fire heat, the air of the house being kept rather dry. Early Muscats require a night temperature of 65° to 70°, advancing 10° to 15° by day, closing the house at 80° to 85° in bright weather. When in flower every bunch should have a large flat camel's-hair brush drawn lightly over it, and if there is a deficiency of pollen that of Hamburgs should be applied. Thinning the berries must commence with the free-setting varieties as soon as they are formed, but if the Vines are inclined to produce stoneless berries thinning should be deferred until those properly fertilised take the lead in swelling. Remove duplicate bunches, leaving the best and most compact, always avoiding overcropping, and aiming at high finish.

THE KITCHEN GARDEN.

Broad Beans.—Where these are wanted extra early, there will be a considerable gain by raising plants under glass to form rows across a south border. Sow seeds of the Early Longpod singly in 3-inch pots, and place in gentle heat to germinate. Before the plants become drawn and much root-bound, they must be hardened, and the first favourable opportunity taken of planting out. Afford temporary shelter for a few days after planting. As early in this month as the ground is found to be in a moderately free working condition, sow seeds of the variety named in rows 2 feet apart. If room on a warm border cannot be afforded this crop, it may be relegated to a sunny open spot, a slope to the south answering best.

Early Peas.—If seeds of early varieties are sown now in boxes or 3-inch pots, placed in gentle heat to germinate, and eventually placed out of doors, good gatherings will be afforded earlier than any rows obtained by sowing seed in the open at the present time. Not much is gained by sowing in the open ground before the middle of February, but if the soil is found in a comparatively dry, free working condition, a week or so earlier, it is well to sow the seed. Only the hardier round-seeded varieties should be sown.

Spinach.—Rows of August-sown Spinach have already done good service, the mild autumn favouring late growth. With a change to warmer weather active growth will recommence, and this will be further promoted if soot is freely sown between the rows, and lightly stirred in with a Dutch hoe. The first favourable opportunity should be taken of sowing more seed on a rich warm border. Much the finest leaves are produced by the Victoria or Monstrous Viroflay.

Early Carrots.—It is yet too early to sow Carrot seed in the open, but those who have not the convenience of glazed frames, may yet have many early bunches of tender roots with the aid of a mild hotbed, boards, and rough coverings of some kind. Six inches of fine light soil is ample for spreading on the surface of the manure, and by sowing the Carrot seed, either Early Horn or Nantes Horn, thinly broadcast, Lettuce, Radish, and Celery seeds may accompany it. Cover lightly with fine soil, and protect with either straw or mats. Lettuce plants to be transplanted,

and Radishes pulled early, and the Celery plants to be drawn when large enough to prick into boxes, the Carrots eventually having the bed to themselves till the Vegetable Marrow plants, raised or planted in the centre, begin to ramble.

Radishes.—Market gardeners succeed in raising profitable early crops of Radishes without the aid of hotbeds or frames. A sunny open spot is chosen for the beds, and as early in February as the weather and the state of ground permit seeds are sown either broadcast or in drills, and covered with a little soil. A light covering of straw litter serves to protect from both cold wind and birds, and when the seedlings are through the ground this has to be raked off every morning, returning it again in the evening. More seeds should be sown a fortnight later.

Early Turnips.—Late-sown Turnips had good time to attain to a serviceable size, and the roots, therefore, are not so scarce this winter as anticipated. Whether they keep well or not a supply of early Turnips will be appreciated, and they also sell well. If wanted extra early sow the seed over a mild hotbed, and protect from cold winds and frosts either with glazed lights or mats. Early Milan is the best type for forcing, and also for sowing in the open. A good position for this crop is an east or south-east border made moderately rich. Sow the seed thinly in drills 1 foot apart, and protect with litter as advised in the case of Radishes.

THE BEE-KEEPER.

HOW BEES ARE DESTROYED.

IN country districts, more particularly when the apiary is near the woods, numerous bees are destroyed during the early spring months by the birds. The common house sparrows are somewhat troublesome in this respect, as they take the bees whilst on the wing. The losses from these, however, are small when compared with that pest of bee-keepers the great tit. Directly, the days begin to lengthen and the sun is gaining power, these little pests turn their attention to the bee hives. If there are no live bees visible they appropriate those that have been turned out of the hive and which have died from old age or other causes. In this respect they are useful scavengers. They are not satisfied, however, with the dead and outcast from the hives.

The birds are aware of the fact that it is only necessary to give a few successive taps at the entrance of the hive to cause the bees (should the weather be warm enough) to leave their hive. Thus they fly from one alighting board to the other, tapping with their beaks as they alight. The first bee that is visible is at once seized and taken to a neighbouring bush and dissected, the head and sting being removed, and the abdomen consumed. Only a few seconds is required for this operation, and it is surprising the number of bees a few tits will destroy in the course of an hour when the weather is favourable. It is only when there is a fall of snow and it remains on the ground for a few days that an ordinary observer will note the mischief that is being done. It is, however, not only during severe weather that this death rate is going on, as it is quite as prevalent, or even more so, during mild days, only it is not so easily detected.

DESTROYING BEE PESTS.

We are convinced that it is the large tit (*Parus major*) that is the greatest culprit. We have often trapped the blue tit (*Parus caeruleus*) on the alighting boards of the hives. But after observing their habits on many occasions we have come to the conclusion they do little harm to the bees. They will devour them quite as readily as the great tit, but we have not observed them entice the bees out. We destroy them by using a V-shaped trap, baited with bread or meat, which is a very simple and expeditious way. It is only at this season, or as long as they pay close attention to the hives and their inmates, that we trap them, as they doubtless do a great amount of good at other seasons, and their nests are not interfered with.

Mice, too, are often troublesome, but in a different manner, for it once they gain an entrance to a hive they usually take up their winter quarters there. The bees being closely clustered together in the hive, are not interfered with until the mice have consumed their stores and destroyed the combs, when they die of starvation. In some districts mice are very troublesome in this respect, and it is an advantage to always have some baited traps near the hives throughout the winter, as mice will travel a long distance for food, and they are easily caught by using similar traps to those recommended for the tits.

It is an advantage to have the entrance to the hives made not more than three-eighths of an inch in depth. This will allow ample room for the bees to pass, and the mice will not be able to gain admittance. If straw skeps are used the entrance is usually large, and the mice can thus pass in readily, unless means are taken to prevent them. If a piece of zinc is fastened over the entrance, and two or three small holes are cut at the bottom, so that the bees can pass through, all will be well.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Sweet Peas for Exhibition (B.).—We scarcely know what you mean by the "single stem system." If you mean training one plant to a stake, and these a foot or more apart, we should not deem it the best plan for an exposed position. We should prefer a richly prepared trench, nearly a foot wide—or, in other words, the ground broken up to the depth of 2 feet, and made good to that depth with sweet moist decayed manure, adding also wood ashes, as well as a handful of bonemeal, over a length of 2 yards. If the seeds are placed evenly over the trench on a layer of light soil, and covered 2 inches deep with the same kind of free soil, the surface being a couple of inches below the general ground level, and the plants appear 3 inches apart, exhibition blooms may be had by the aid of judicious applications of liquid manure when the plants are advancing in growth. We know of nothing better as supports than fresh twiggy Hazel rods, which are plentiful in some districts, and sold in bundles, both in the country and the suburbs of towns. Just as this reply is completed an article comes to hand from a successful cultivator, and it does not seem to differ materially from the advice above given.

Woodlice in Stable Manure (Gordon Road).—You wish to know what to mix with stable manure and Oak leaves to keep away woodlice, which eat up the young plants as they appear, in your propagating bed. As a rule where woodlice abound the manure and surroundings of the frame are too dry. Take care that the material of which the bed is composed is moist. A light sprinkling of guano amongst it would assist fermentation and be obnoxious to woodlice; but the surface of the bed must be well and closely covered with cocoa-nut fibre refuse or other suitable material for standing the pots on and preventing any escape of noxious gases from the bed into the frame. This covering must be kept moist, and no fissures allowed near the sides of the frame or elsewhere. If the pests still find entrance remove the pots for a few moments and give the bed a soaking with boiling water, also all round the outside of the frame in your greenhouse, and you will soon reduce the numbers of the enemy. We suspect you provide dry corners somewhere, which woodlice enjoy, and increase and multiply accordingly. We do not think they are worthy of being made so comfortable.

Apple Norfolk Bearer (D. W.).—We do not consider the variety to be Norfolk Bearer, of which the following is Dr. Hogg's description:—"Fruit, about medium size, 2½ inches wide and 2½ inches high; roundish and obtusely angular from the middle towards the crown, where it is rather narrow. Skin, smooth and shining, very much covered with lively crimson, which is marked with broken stripes and spots of darker crimson extending over one-half of the surface or wherever exposed to the sun; on the shaded side it is green, with a yellowish tinge as it ripens, and with some dots and broken streaks of light crimson where it blends with the sunny side; it is covered all over the surface with rather large russet dots, and altogether is much the same colour as Norfolk Beefeater. Eye, half open; segments, erect convergent, placed in a shallow, narrow, and plaited basin. Stamens, median; tube conical. Stalk, very short, sometimes a mere knob, or over half an inch long, slender, inserted in a narrow and not very deep cavity. Flesh, greenish, tender, crisp, with a brisk and agreeable flavour. A culinary Apple of very good quality; in use during December and January. Its great recommendation is its productiveness. I find it an excellent variety for growing in the northern districts, such as the south of Scotland, where it succeeds remarkably well." We do not know the local variety you name.

Summer Flowering Plants for Dry Shaded Border (M.).—A few are *Aconitum napellus*, *Adonis pyrenaica*, *Agrostemma coronaria*, *Anemone japonica*, *A. j. alba*, *Armeria plantaginea grandiflora*, *Campanula glomerata aggregata*, *C. g. alba*, *Digitalis gigantea*, *D. purpurea* vars., *Erodium Manescavi*, *Geranium ibericum*, *Geum coccineum fl. pl.*, *Hypericum calycinum*, (*Eurothera fruticosa* Youngi, *E. macrocarpa*, *E. taraxacifolia*, *Oxalis floribunda*, and *Sedum spectabile*. German Irises often succeed if planted, as all should be, when the soil is moist; also herbaceous *Pæonies*.

Grasses for a Lawn (Z.).—For producing a superior lawn in thoroughly clean, good, well prepared soil, the following mixture has been found to answer well. Four pounds each of *Agrostis vulgaris*, *Cynosurus cristatus*, *Festuca tenuifolia*, *Poa nemoralis*, and *Poa pratensis*. The quantities given are for a rood (¼ acre) or ½ lb. per rod of 30½ square yards. It would be better to increase than reduce the quantity where small birds are troublesome, or when a close lawn is desired very quickly. The seeds can only be sown evenly on a calm day, and it is desirable to take advantage of warm, dull, showery weather from the middle to the end of April for the operation. If the preparation of the ground is completed early in March natural weed seeds that it may contain will germinate in time for the small seedlings to be hoed up before sowing the grass seeds, and the lawn will be the cleaner. White Clover is excluded from the mixture because the leaves remain wet after dew or rain much longer than the grass does, making the surface too greasy for pleasing croquet or lawn tennis players. If Clover is desired seed should be sown separately, not mixed with the grass seeds. We have seen croquet played on ground in six weeks after the seeds were sown on 25th April. Light soil was sifted over them and warm showers followed. In this particular case half as much more seed was sown as above stated, but the quantity given answers very well when birds do not get a goodly share, as they usually do if the seeds are not placed out of their sight by a light covering of soil.

Pruning Cherry Trees (O. F.).—The Cherry, like the Apple, produces fruit mainly on spurs, the buds being, however, much smaller and several clustered together, with a growing bud in the centre. In pruning, therefore, the short stubby shoots must be left, and many of the buds on them will develop into trusses of bloom, and, all being well, Cherries will follow. Extension growths—that is, shoots that form branches, being usually of moderate strength on old trees, may be left their full length, and if thinly disposed will form spurs and give fruit in due season. When the young side shoots are a considerable length it may be necessary to shorten them to give rise to other growths at the desired points for covering the space properly with branches. Old trees usually require the old spurs thinning, cutting away the weak and long, and thus giving those nearest the wall the better advantage. They must not be very close together, but at least 6 inches apart, removing some of the least promising, if necessary. Keep the trees free from insects.

Triple Buds on Apricot Trees (Idem).—Triple buds consist of three buds at a joint of the shoot, two at the sides of a central one, which is generally a wood bud, and the others blossom buds. Spurs, which are stubby clusters of buds, must not be cut back, but if very close together some of the weaker may be entirely removed. Elongated spurs may be shortened to a growth nearer the branch from whence they proceed. This must be done very carefully and with judgment, otherwise there cannot possibly be any fruit, as growths are essential to produce it, and fresh ones do not always push from the branches when spurs are cut entirely away. The Apricot, however, produces both spurs and young shoots annually, and bears fruit on the latter as well as on the short stubby shoots or spurs. The young shoots may only be a few inches long, or they may extend several inches during the summer, but it is usual to stop these at about 6 inches of growth, or to five or six leaves of their base in July, which causes them to plump the basal buds and form blossom buds there. At the winter pruning these shoots are cut back to an inch of their base, and the buds thus left will be, or mostly are, some wood and others blossom buds. A double bud usually consists of a blossom bud at the side of a wood bud, and therefore growth is sure to issue when a shoot is cut to a double or triple bud. We do not know of any small work such as you require, but may publish illustrations that may be helpful in some future issues. A crowbar may be procured from any blacksmith. The holes for liquid manure should be made a foot or more deep, filling them repeatedly with the liquid, and afterwards closing them with rich soil and wood ashes pressed firmly down. In making the holes avoid injuring the roots, especially the large ones near the stem. The sooner the work is done after the frost has gone the better.

Eggs on Apple Twig (Medway).—The eggs are those of the lackey moth, *Bombyx neustria*, which, in the larval stage, is very destructive to the leafage of Apple and other fruit trees. From the eggs small black hairy caterpillars emerge about the beginning of May, and they spin a web over themselves for protection, which they enlarge from time to time as needed for their accommodation. The caterpillars go out to feed on the leaves and return to the web-nests. The thing is to prevent their emerging from the eggs. The rings of eggs are very hard and difficult to crush with a knife unless a hard substance be placed against the opposite side of the ring, and the back of the knife applied with considerable pressure. We have cracked and removed the bands of eggs in this way without injury to the shoots, which is often a matter of consequence, as the removal of the twigs with the rings of eggs may interfere with the progress of the tree. Where this is not material, the shoots containing the rings may be cut off and the eggs destroyed by burning. No outward application appears to act on the eggs, as they are too glassy; therefore, in the case of orchards, the larvæ may be allowed to emerge and then destroy them in the small webs, they being easily crushed with the hand,

or the trees may be sprayed with Paris green, 1 oz. to 20 gallons of water. and the caterpillars eating the leaves coated with the thin film will be poisoned by repeating the spraying at intervals of a few days if the weather is showery.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening.* *Dessert Pears cannot be named in a hard green state.* (S. D.).—1, Court Pendu Plat; 2, London Golden Pippin; 3, doubtful, resembles Lemon Pippin. (A. W.).—1, Bramley's Seedling; 2, Braddick's Nonpareil; 3, Court of Wick.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. M.).—1, Libonia floribunda; 2, Chimonanthus fragrans; 3, Jasminum nudiflorum. (P. P.).—1, Scelopendrium vulgare cristatum; 2, Davallia concinna; 3, Pteris tremula variegata; 4, Davallia canariensis; 5, Polystichum aculeatum; 6, Adiantum cuneatum. (B. S. D.).—1, Acacia armata; 2, Dracæna indivisa; 3, Eranthemum pulchellum. (D. J. R.).—1, Sparmannia africana; 2, Linum flavum; 3, Ceanothus rigidus; 4, Berberis Darwini. (D. S. E.).—1, Cypripedium villosum; 2, Dendrobium Wardianum; 3, Cattleya Trianae, poor form; 4, C. Trianae, good light variety.

COVENT GARDEN MARKET.—FEB. 8TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Cobs ...	30	0 40	St. Michael's Pines, each	2	6 5
Grapes, lb. ...	1	2 2			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0 0	Onions, bushel ...	3	6 4
Beet, Red, doz. ...	1	0 0	Parsley, doz. bnchs. ...	2	0 3
Carrots, bunch ...	0	3 0	Parsnips, doz. ...	1	0 0
Cauliflowers, doz. ...	2	0 3	Potatoes, cwt. ...	2	0 4
Celery, bundle ...	1	0 0	Salsafy, bundle ...	1	0 0
Coleworts, doz. bnchs. ...	2	0 4	Scorzoneria, bundle ...	1	6 0
Cucumbers ...	0	4 0	Seakale, basket ...	1	6 1
Endive, doz. ...	1	3 1	Shallots, lb. ...	0	3 0
Herbs, bunch ...	0	3 0	Spinach, pad ...	0	0 0
Leeks, bunch ...	0	2 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 1
Lettuce, doz. ...	1	3 0	Tomatoes, lb. ...	0	4 0
Mushrooms, lb. ...	0	6 0	Turnips, bunch ...	0	3 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3	0 to 4	Lilac, bunch ...	3	6 to 5
Asparagus, Fern, bunch ...	2	0 2	Lily of the Valley, 12 sprays	0	6 1
Azalea, white, doz. bnchs. ...	3	0 4	Marguerites, doz. bnchs. ...	4	0 5
Bouvardias, bunch ...	0	4 0	Maidenhair Fern, doz. bnchs. ...	6	0 8
Carnations, 12 blooms ...	1	6 3	Narcissus, doz. bnchs. ...	1	0 2
Chrysanthemums, per bh. ...	1	6 2	Orchids, var., doz. blooms	1	6 9
" specimen blooms, per doz.	1	6 to 2	Pelargoniums, doz. bnchs. ...	6	0 10
Daffodils, single yellow, bh. 12 blooms ...	1	0 0	Poinsettias, doz. blooms ...	0	0 6
Daffodils, double, bunches	0	6 0	Roses (indoor), doz. ...	2	0 3
Eucharis, doz. ...	2	0 3	" Red, doz. ...	6	0 8
Freesia, doz. bnchs. ...	2	0 4	" Tea, white, doz. ...	2	0 4
Gardenias, doz. ...	6	0 8	" Yellow, doz. (Perles)	2	0 8
Geranium, scarlet, doz. bnchs. ...	6	0 8	" Safrano, doz. ...	1	0 1
Hyacinths, Roman, bunch	0	6 0	" Pink, doz. ...	0	0 0
Lilium lancifolium, white	0	0 0	Smilax, bunch ...	2	6 3
" longiflorum, 12 blooms	4	0 6	Tulips, bunch ...	1	0 1
			Violets ...	1	0 2
			" Parme, bunch ...	2	6 3

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0 36	Foliage plants, var., each	1	0 5
Aspidistra, specimen ...	5	0 10	Lilium Harrisii, doz. ...	21	0 36
Crotons, doz. ...	18	0 24	Lycopodiums, doz. ...	3	0 4
Dracæna, var., doz. ...	12	0 30	Marguerite Daisy, doz. ...	9	0 12
Dracæna viridis, doz. ...	9	0 18	Myrtles, doz. ...	6	0 9
Erica various, doz. ...	9	0 24	Palms, in var., each ...	1	0 15
Euonymus, var., doz. ...	6	0 18	" specimens ...	21	0 63
Evergreens, var., doz. ...	4	0 18	Pelargoniums, scarlet, doz.	8	0 12
Ferns, var., doz. ...	4	0 18	Solanums, doz. ...	6	0 12
" small, 100 ...	4	0 8			



FEEDING CATTLE FOR MEAT.

IN discussing the above subject, in this article we do not propose to include the production of veal, for the only way to produce good veal is in the natural way with the mother's milk, the calf being slaughtered at ten or twelve weeks old.

The economic production of good beef is quite another question, and in view of the severe competition from abroad, with the consequent low range of beef prices, one very difficult of solution if it is to be carried on at a profit. Every year we find the feeders of three-year-old bullocks complaining of the lack of profit, and vowing that they will in future sell off their cattle at an earlier age; but although the proportion of well-matured beasts is gradually dwindling, there are still more than enough to supply existing demands. The root of the difficulty lies in the fact that foreign beef sells at a lower price than English, and the English farmer must either improve his quality or submit to reduction in price.

The consumer asks for small joints with plenty of lean meat in proportion to the bone and fat. Now, the highly forcing process, so much advocated, of keeping young cattle in a fat condition from birth, never losing the calf-flesh, and coming to the butcher's knife at eighteen or twenty months old, has the advantage of providing the small joints; but the animals must be very carefully bred with a view to such a system, or the lean meat will not be present in the proportion required. The Shorthorn-Aberdeen Angus cross is the best animal for the above purpose.

But is it absolutely necessary to keep calves sucking until they are nine months old or more? for such has been the usual practice in forcing young beef. In the R.A.S. Journal for September, 1895, there is a short note by Sir John Thorold on the use of meatmeal for calves fed with the bucket. This meatmeal is the residue from the manufacture of Liebig's or Brand's extract, and is sent dried and ground from South America, the cost being £7 10s. per ton. It contains 16 per cent. of fat, 72 per cent. of nitrogenous matter, and phosphoric acid equal to 1.38 of phosphate of lime. Sir John scalded the meal and added it to the warm skim milk in the proportion of 1 oz. to 1 pint, and found that calves fed on it did better than those fed on skim milk and linseed porridge. A Frenchman, M. Gouin, had found this meatmeal the most successful substitute for the cream of the milk, and attributed its good qualities to the presence of phosphoric acid in a readily assimilable form.

It was found, however, that calves fed on this material did not make good veal, the meat being dark in colour, so it should only be used for store animals. Sir John Thorold found it useful for reared calves, giving it dry mixed with meal.

The successful use of meatmeal for calves is a strong argument in favour of the use of highly nitrogenous foods for young animals, a point on which most authorities are agreed.

If we are to have a well-grown, well-fleshed, fat bullock at two years old, we must see that the calf for the first twelve months has

a diet rich in nitrogen and phosphoric acid, so that it has the wherewithal to form bone and muscle.

As a large proportion of calves are born in the spring, the period of age from twelve to eighteen months will generally be spent out at grass. Good grass being a perfect natural food for growing stock, little assistance may be needed, but undecorticated cotton cake will be a safe food on grass if used in moderation. Later, as pastures run off, more cake can be given in the form of linseed added to the former ration of cotton.

The next, and a most important question is, when to bring the cattle up from grass? Do not make the mistake of keeping them out too long. Cattle for winter feeding should be in the yards by October 1st, and earlier if the pastures be poor and bare.

But we have got our animal up to the age of eighteen months, and if he has been properly treated he should be a well grown bullock, and ready to undergo the final fattening.

Nearly fifty years ago a series of very exhaustive experiments were carried out at Rothamsted with a view to testing the assimilating powers of oxen, sheep, and pigs. During these experiments it was found that the increase in animals in the fattening process depended in a much more uniform degree on the carbohydrates of the foods than on the nitrogenous portion.

The result of comparative tests showed that in the increase of weight as between an average store bullock and a fat one, the increase of fat was in proportion of 11 to 2 of other solid matters. We may, therefore, take it that we are using no misnomer when we speak of fattening bullocks; in fact it is a much more expressive term than feeding, the one in general use.

Notwithstanding the low price of starchy foods—(i.e. carbohydrates) such as Maize and Barley, few farmers can be found who believe much in their use for the fattening of cattle. When Wheat was down at 20s. per quarter in 1895, hundreds of farmers tried the use of it for cattle feeding. None have persevered with it, and even if prices were to fall to such a level again, we do not suppose they would repeat the experiment. The fact is that where there is a good supply of roots, which generally accompanies winter feeding, oil cakes are found by feeders to give most satisfaction.

Experiments with home-grown Wheat and Barley were carried out at Woburn in 1895 in the feeding of bullocks. The grain was griddled and given in conjunction with cake, other experiments being tried with cake alone. The Wheat and Barley were charged at the rate of £1 per quarter, the local value at that period. The linseed cake cost £7 per ton, and the decorticated cotton £6.

The general results of the trials went to show that the cattle gave the most increase from the mixture of cake and corn, but the difference was not a great one, and this without reckoning anything for residual manurial value. When the latter was brought into account the balance was much in favour of the cake. And this with Wheat at 20s. per quarter!

It would appear that Maize at 20s. is not a cheaper food than cotton and linseed cakes at £5 and £8 respectively, and that there is no advantage in using it except to give more variety of food and tempt the appetite during the last stages of fattening. It is at this period that a little meal sprinkled over the pulped roots and chaff encourages the animal to eat up, but if Barley can be got for anything like a reasonable price we should prefer barleymeal to ground maize.

A question in connection with cattle feeding which has engaged some attention is the advantage of cutting up straw into chaff. About ten years ago Mr. Henry F. Moore of Somerset addressed letters to 200 leading agriculturists asking them to give their experience as to—1, Chaffing; 2, Mixing; 3, Cooking; and 4, Steaming cattle foods.

The replies were very strongly in favour of chaffing straw, chiefly from motives of economy and with the view of maintaining more stock. Mixing was also strongly advocated, especially the mixing of chaffed straw and pulped roots, leaving sufficient time for fermentation to take place before use. Cooking and steaming were not looked on with so much favour, except in the case of damaged

hay or straw, which might be useless for food unless treated in such a way.

Summing up on the whole subject it appears that the young animal requires food rich in nitrogen and phosphoric acid. Linseed cake, though expensive, is too well supported by practical men to be lightly thrown aside, and if beanmeal be added in increasing quantity until the age of twelve months, then decorticated cotton cake (again in increasing quantity), the original rations remaining *in statu quo*. With the addition of a little barleymeal in the latter stages, when the beanmeal may be dropped altogether, we think that the butcher will not find much fault when the bullock comes to market, and the crops of the farm will speak silently, though eloquently, for the quality of the muck with which they have been grown.

WORK ON THE HOME FARM.

We are surely to have no winter this season, for no sooner had a couple of sharp nights last week frost-bound the roads, and set the muck carts running, than once again the wind changed, the thermometer rose, and a reversion to the previous muggy and muddy state occurred.

Last year at this time many farmers had already drilled considerable breadths of Barley and Oats. We have not yet heard of any drilling this year, for perhaps the good reason that the land is so much wetter than a year ago, and there is not the same encouragement to take advantage of a fine seedbed.

The land is certainly not yet fit for Barley sowing, but on good well drained soils Oats might be drilled with advantage on lea that has lain a sufficiently long time since ploughing. To drill now, the land should have been turned over before Christmas. Plenty of seed must be used, for the young plants will have many enemies, and four bushels will not be any too much to put on an acre. We do not ourselves care for such early sowing, but where there is a large breadth of spring corn to sow, and this is frequently the case now, Wheat has been discarded so largely, the putting in of a field or two in February helps much to relieve the pressure of spring work later on, when it always has a tendency to run into arrears.

A fair seedbed will do for Oats, as evenness of growth is not so essential for this crop as it is for Barley, and horses might be more profitably employed in drilling Oats now than in ploughing a recently trodden sheepfold with the water still in it. We like to keep the plough close up behind the sheep; but, except on the very lightest soils, it will not do to plough Turnip land in a wet state.

Wheat wants rolling, but the surface is too wet; the roller is ready in the field, and the first windy day will see us making a try with it.

Hedge plashing and scotching is now about finished, as it should be, and the men are engaged in using the best thorns for filling up gaps, and strengthening weak places in the other fences. The rail and wire fences must also be looked over, for it is not long now to spring time and spring grass.

METEOROLOGICAL OBSERVATIONS.

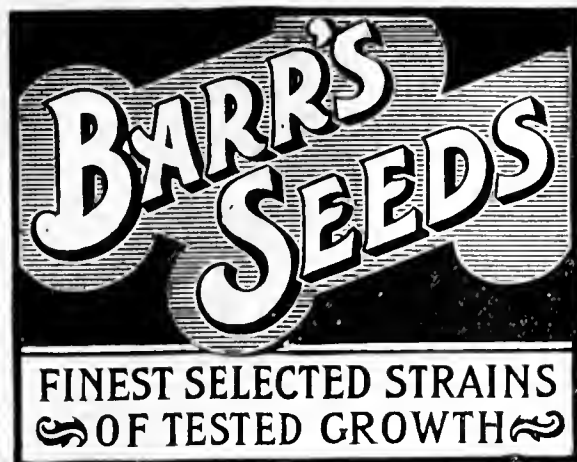
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899. January and February.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	29	30.062	37.7	37.5	N.	37.2	41.6	32.2	47.2	28.4	0.107
Monday	30	29.933	39.2	38.2	N.E.	38.0	44.3	36.6	52.4	30.0	—
Tuesday	31	29.745	34.7	34.2	N.	38.1	39.7	30.8	46.9	26.8	—
Wednesday	1	29.483	36.2	34.2	N.W.	38.1	39.9	34.6	45.5	31.9	—
Thursday	2	29.499	36.3	30.0	N.	37.9	40.4	28.4	73.4	24.3	—
Friday	3	29.844	32.1	31.3	W.	37.0	38.6	28.8	62.3	23.8	—
Saturday	4	30.008	28.1	28.1	S.W.	36.4	39.7	25.8	70.8	22.1	0.380
		29.796	34.0	33.4		37.5	40.6	31.0	56.9	26.8	0.487

REMARKS.

- 29th.—Continuous rain from 7.30 A.M. to 2 P.M., then dull and damp, and showery again in evening.
30th.—Damp and showery early; fair after with gleams of sun, and frequently sunny after noon.
31st.—Overcast all day.
1st.—Fair day, with some faint sun in afternoon.
2nd.—Cloudy early; frequent faint sun in morning, and brilliant afternoon and night.
3rd.—Faint sun in morning, bright in afternoon; clear night, with a slight low fog.
4th.—Fog, rather thick, till 10.30, bright sun from 11 A.M.; began to cloud about 1 P.M. and overcast later, with occasional flakes of snow.
A fine week, but with heavy rain in the early hours of the 5th, which has to be entered for the 4th. Temperature slightly below average.—G. J. SYMONS.



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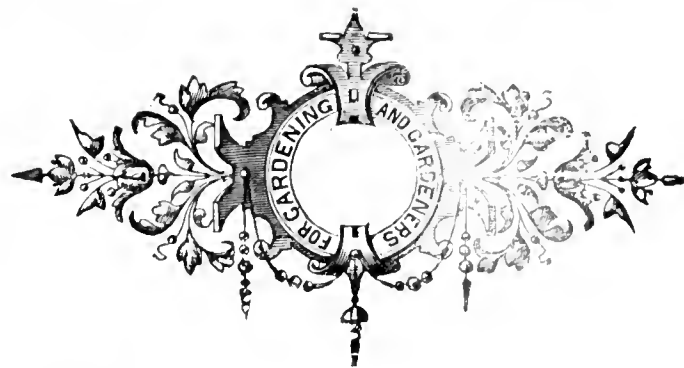
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Journal of Horticulture.

THURSDAY, FEBRUARY 16, 1899.

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THE BEST PEACHES.

SOME of the facile wielders of the pen have lately been indulging in interesting pleasantries concerning the best varieties of Apples. In the main they seem to agree that those of acknowledged good quality are the best everywhere (when they can be obtained), but one has to get them first. This difficulty in getting certain varieties to bear satisfactorily in some localities leads some of the happy family of Apple connoisseurs to substitute others for their own particular district. In this way much useful information has been elicited. Now, why should we not thrash out the subject as to which are the best varieties of Peaches? In this case the partiality of some varieties for certain districts is not so pronounced, as, when grown under glass, the majority behave pretty much the same everywhere, provided their cultural requirements are well attended to. Such at least is my experience.

In regard to culture on walls in the open air, growers in various districts have to look at the matter in different lights. For instance, in the Midlands and North, it is quite useless to plant any but comparatively early varieties. Warrinco, Alexander, and Hale's Early are a trio which will prove satisfactory on sunny walls almost anywhere in England. Midseason varieties, such as Royal George, Grosse Mignonne, sometimes succeed in the Midlands and North; but if we happen to get a wet August or September, they do not ripen well. On the other hand, in the South, such large late varieties as Walburton Admirable and Princess of Wales often ripen grand fruit in the open air. I do not say that they are worth eating, but they look well.

I remember, when living in Wiltshire, we invariably had grand fruits of The Princess in September, and although they were not much prized for home consumption, the London fruiterers generally paid high prices for them, for such made an imposing display in their windows, and possibly proved objects of attraction on more than one dinner table, for modern attempts at economy have become quite a science; there is on some

dinner tables a pronounced distinction between the fruit intended to be eaten and that only expected to be admired. If I were asked to name what I considered to be the six best Peaches for growing in the open air in the south and south-western counties, I should give the following: Waterloo, Early Grosse Mignonne, Dymond, Stirling Castle, Royal George, and Sea Eagle. This selection would give a good succession of fruit from July till the end of September. The constitution of each variety is good, and with high culture all are sure croppers.

Turning to Peaches grown under glass, it is necessary to make a selection suitable for early, midseason, and late houses. We have now so many sterling varieties to select from which possess both vigour, high quality, and productiveness, that there is less excuse than ever for growing sorts which do not combine all these good qualities. For early forcing, I pin my faith on Alexander, Waterloo, and Hale's Early. A house planted with these would, I think, prove a good commercial investment, for fine Peaches in May always command good prices, and without subjecting the trees to very hard forcing, these varieties may be easily ripened during that month. Stirling Castle and Royal George were formerly the favourites for early work; but when growing under the same conditions, they are fully three weeks later than Alexander. Yet there are some cultivators who still continue to plant them in the earliest house; if with the object of providing a succession the practice is sound; but when the aim is to secure abundance of fruit as early as possible, there is no justification for the practice.

For midseason houses we can make a somewhat more numerous selection, as there are many varieties so close in point of merit that it may be regarded as a matter of taste which are chosen. Stirling Castle, Royal George, and Grosse Mignonne are now old favourites which are still excellent for second early houses. They grow well, fruit abundantly, and when well done, develop fruits of fine size and attractive colour. Bellegarde, Violette Hâtive, and Noblesse form another trio of substantial worth; but were I compelled to select only three, I should name those just given, placing Royal George as the pick of the lot.

Noblesse is perhaps the most exquisite flavoured Peach grown, but it is not generally so prolific as many other varieties. Some cultivators succeed with it regularly, many other good ones do not. This seems to point to the fact that certain peculiar conditions are necessary for its welfare. Probably a considerable addition of lime or fresh lime rubble mixed with the soil when forming a border would be beneficial. Journal readers who have been successful in securing good crops annually of this fine Peach, will perhaps give the outline of their management, stating the peculiarities of the soil forming their border. My experience is that Peaches in late houses give the cultivator the best opportunities of providing fruit of the largest size, and, in good seasons, finest colour. Plenty of time can be allowed for swelling and colouring, while the protection of glass does away with the drawbacks attending open-air culture, and if the house is provided with a flow-and-return pipe, slight heat can be given at critical times when the weather is bad.

Sea Eagle, Gladstone, and Golden Eagle are three varieties which I think would be very difficult to improve upon for late houses. The first-named is a really grand Peach in regard to size, colour, and form; in flavour it does not, of course, equal Royal George or Grosse Mignonne; but then, I know of no late Peach much better than Sea Eagle in this respect. Mr. H. W. Ward, when at Longford Castle, used to exhibit grand examples at the Crystal Palace Show in September, and the superb dish staged by Mr. W. Iggulden, at Shrewsbury Show, last year, was the most handsome one at that great exhibition. Golden Eagle provides us with a brilliantly coloured variety, so distinct from all others that it always commands attention; but it is better to look at than to eat, although sometimes described as good in flavour. In the matter of flavour, Gladstone is very much better than its tempting-looking companion.

No doubt tastes differ in regard to flavour in Peaches as in most other things, and it may be that some lusty scribe will take me to task in this point, as well as others raised in these brief notes. Well, none of us will be the worse for words that carry no venom with them, and in putting me right, others may be prevented from going wrong. —H. D.

PELARGONIUMS FOR WINTER.

THERE are few, if any, plants which possess so many good qualities as the "Geranium." It is easy of culture, has an endless variety of colours, produces its flowers on long stems, and these can be had the whole year round. It is a simple matter to obtain a brilliant display during the bright and sunny months of the year, but in the cold and sunless months of winter more care and forethought are demanded. However, any trouble spent in preparing the plants is repaid, as well grown thoroughly matured specimens produce an abundance of beautiful trusses and make a gorgeous display, and I question if any other plant gives such a lavish return. Now is a good time to commence if it is decided to grow a number of these useful plants for either supplying flowers for cutting or plants for decoration in the conservatory or greenhouse.

One thing I wish to say in starting so that disappointment, which I once experienced, may be avoided by others. About seven years ago I took charge of some gardens where a good conservatory was attached to the house. I resolved to grow Zonal Pelargoniums for the purpose of having this house as bright as I possibly could. At the end of the season I had some beautiful plants bristling with trusses, but when they were placed in the conservatory in question scarcely a truss developed, but one after another they damped off till they became a perfect eyesore. The cause of this failure was simply lack of light and sunshine. That conservatory is so situated that for three months in winter it never gets a ray of sunshine; therefore, to those who have had no experience in winter blooming "Geraniums" I would say take warning from my failure, and do not attempt their culture unless you have suitable accommodation for them during winter. A house which receives a maximum of light and sunshine is the one best adapted for the plants in winter, and unless such is available I would not advise anyone to attempt to grow them.

Select sturdy cuttings of such varieties as are at hand, because in my experience one variety is as good as another for the purpose, and place them singly in thumb pots in light sandy soil. Give a thorough watering, and stand the pots on a shelf in a vinery lately started, shading from bright sunshine till they are rooted, after which they should be fully exposed to all light and air possible. As soon as the roots begin to run round the sides of the pot transfer to a larger size, keeping them close and warm for a few days till root action recommences, when they may be gradually exposed till they once more will bear exposure to full sunlight with abundance of air. At this stage they may after careful hardening be placed in cold frames, allowing plenty of room for development. In the event of cold frosty nights setting in provision should be made for protecting them with mats or other materials.

Careful and constant attention to watering and airing will be all that is requisite until they require another shift, this time into 6-inch pots, which I consider the most suitable size for flowering. As the plants will necessarily remain in these pots for a considerable period, a little extra care must be taken in their preparation. See that they are scrupulously clean both inside and outside, and the drainage so placed that there will be no danger of choking, and thus souring the soil, which is inimical to the well being of the plants. For this potting I prefer a retentive loam with a fourth part leaf mould, and sufficient rough sand to keep the compost porous; to this should be added a sprinkling of bonemeal and some approved chemical manure.

Turn the plants carefully out of their pots, avoiding injury to the tender roots, as much damage is often done by careless workmanship at this period. The plants, by having their roots broken, receive a severe check which it takes some time to overcome. Firm potting is of great importance, thus causing the plants to make short-jointed sturdy growths which will eventually produce excellent trusses. Replace, after potting, in the frames, keep close for a week or so, and then gradually expose until they can be placed outside in full sunshine upon a bed of ashes, allowing sufficient space between each plant for light and air. Pinch the points out of any shoots that have an inclination to take a lead of the rest, and thus keep the plant well balanced. Nip off all trusses as they appear till the month of September. From the time they are placed outside the daily routine work of watering should have unremitting attention, as to allow them to become too dry means death to many useful rootlets, resulting in a severe check from which it takes the plants a long time to recuperate.

When the pots become well filled with roots liquid manure should be given, commencing with weak doses, and gradually increase the strength, but be careful not to use it too strong; it is better by far to err on the side of weakness. Give it weak and give it often is sound advice. Should the plants show an inclination to grow too densely they must be tied out a little, so as to give more room for the shoots and foliage to develop.

Towards the end of September they should be placed under cover,

in as light and airy a position as can be got. Above everything, avoid overcrowding. Do not grow 100 plants, if you have only accommodation for sixty. Set the plants well up on inverted pots, so as to allow a free circulation of air amongst them. A temperature not lower than 55°, with a dry buoyant atmosphere, will secure a brilliant display throughout the dullest months of the year, at which season especially the gay trusses are highly appreciated.

Some may think I have been unnecessarily minute in details, but it is by attending strictly to what may appear trifles that success is attained. If the foregoing notes should prove helpful to someone who may be anticipating the growing of a few of these simple yet useful plants for winter blooming, then the time occupied will not have been mis-spent. It is not my intention in these notes to teach the professional, but simply to help the amateur.—ALBYN.

CULTIVATION OF LETTUCE.

THE earliest supplies of Lettuce are usually of the Cos section, this being the hardier for standing in the open ground throughout the winter from seeds sown in September. The young seedlings should be planted out in rows in October or November on good but not freshly manured ground, as a very strong and succulent growth is not suitable for withstanding extremes of cold. Damp and birds are the greatest enemies to Lettuce in winter, the former causing the leaves and centres of the plants to decay, while the winged enemies peck at the leaves to such an extent as to arrest the proper growth of the plants. Planting on firm ground in an open situation will do much to arrest the prevalence of damp, and covering the plants with wire guards effectually prevents the attacks of birds.

At this season Lettuce plants which have stood well through the winter may receive good culture in the shape of frequent hoeing of the soil during dry periods. This is largely conducive to growth, and is always beneficial. Blank spaces can be filled up by lifting and planting some fresh plants from the seed bed, selecting the strongest, and lifting carefully with balls of soil. Additional rows should be planted, and these may be placed on richer ground than recommended for the autumn planting. Place a foot apart every way if the plants are good, but closer in the rows should they be small.

In unfavourable situations for planting outdoors to stand the winter, and it is desirable to have an early supply, seed must be sown in boxes in January and February in slight heat. After germination, however, give as little heat as possible, and raise the box of seedlings close to the light in a cool frame or house. The seedlings must be thinly disposed, and when of sufficient strength be pricked out in a frame on a very gentle hotbed near the glass. They will also succeed on a bed of rich soil in a frame without the aid of a hotbed. A daily supply of air must be afforded, especially in favourable weather. It is important that the plants do not become drawn. Gradually give more air, and fully expose on every suitable occasion. Both Cos and Cabbage varieties succeed under this treatment.

Outdoor sowings may be made early in March. Select an open and rich border having a good depth of well worked soil. Pulverise the surface so as to have an even tilth of fine soil. Draw shallow drills a foot apart and half an inch deep. Sow the seeds evenly and thinly, levelling the soil again carefully. Protection must be afforded, or birds will scratch them up and make holes in the bed by dusting themselves in the soil. As soon as practicable thin the seedlings to enable them to grow sturdily, continuing to do this until left far enough apart for developing into fine plants. Water as needed, for by maintaining the soil moist growth receives no checks, which are the chief cause of premature bolting.

Keep the soil free from weeds, and the surface loose by frequent hoeing or stirring. In continued dry weather water is required frequently; but when this is likely to be the case it is highly desirable to mulch between the rows with some decayed manure, and apply water over this when a supply is necessary. The mulching ought not to be given before the plants have attained a fair size, as the cultivation attendant on thinning the plants, weeding, and loosening the soil is highly beneficial, and more conducive to growth than very early mulching, especially during a showery period.

Sowing a large quantity of seed at wide intervals is not so good a plan as making small sowings frequently during late spring and summer, for then a stock is secured in various stages of growth, rendering a continuous supply of succulent Lettuces easy of accomplishment. The thinnings from Lettuce beds may be transplanted, and the plants succeed in moist weather. When once established they grow freely. For the driest periods, however, sow the seed where the plants are to stand.

The best Cos varieties of Lettuce are Sutton's White Heart, Winter White, Paris White, and Paris Green. Of the Cabbage varieties Sutton's Favourite, Commodore Nutt, Tom Thumb, and All the Year Round are excellent.—E. D. S.



NATIONAL CHRYSANTHEMUM SOCIETY.

THE Executive Committee meeting following the annual general meeting is usually a busy one, and that held on Monday evening last was no exception to the rule, much of the business being the nomination and election of several gentlemen to fill vacancies on the various sub-committees. Mr. Percy Waterer, the newly elected Chairman, presided, and after the minutes of the previous meeting had been read and confirmed, several of the new officers expressed their thanks for having been chosen to fulfil those positions.

On the motion of Mr. Dean (the Secretary), it was resolved that a sub-committee be appointed to consider the relations of affiliated societies with the parent society, and report thereon to the Executive Committee. It was further resolved that half this Committee consist of representatives of affiliated societies.

Mr. Crane moved that a vote be passed placing on record the high appreciation by the Committee of Mr. T. W. Sanders' services as Chairman during the past two years. Similar votes were also passed in favour of Mr. R. Ballantine and Mr. George Gordon.

It was arranged that the Society's annual outing, which this year will be to Lord Rosebery's residence at Mentmore, shall take place on Monday, July the 17th.

Replying to certain queries concerning the roll of membership, the Secretary explained that while there were in 1897 806 members, exclusive of foreign subscribers, the number for the past year was but 758. The accessions for the past year were six Fellows, eighty-five ordinary members, and ten affiliated societies, in each case the number being below that of the preceding year.

The election to fill vacancies on the Floral Committee caused by compulsory retirement under rule was then proceeded with, the result that the following gentlemen were elected—viz., Messrs. C. Gibson, W. Higgs, H. J. Jones, J. Lyne, A. Wright, C. Blick, and R. Kenyon.

The Classification Committee was also reconstituted, the Committee being almost the same as last year, with the exception that Messrs. Kenyon and Simmons occupy the places of Mr. Geo. Gordon, who resigned, and Mr. T. Bevan, who by his election to the Vice-chairmanship is now an ex-officio member.

The Schedule Sub-Committee of nine members was also elected, the following accepting a seat on that Committee:—Messrs. Davey, Moorman, Jones, Lees, Taylor, Outram, Gleeson, Nevill, and Crane.

There was some little competition for places on the Finance Committee, Messrs. Moorman, Taylor, and Crane being successful.

The Secretary then submitted the report of the Schedule Sub-Committee, the first item of which was the definition of "Amateur." A motion was also carried that miscellaneous exhibits not competing in any specified class are invited, as they afford interesting variety to an exhibition. It is not required that such be wholly grown by the exhibitor.

Various alterations in the prizes were recommended and agreed to, and among the changes is one for twelve vases of Japanese, distinct, each containing five blooms of one variety, for which the first prize is offered by Mr. H. J. Jones, and consists of a gold medal and £20. Other prizes in proportion are allotted, and each unsuccessful exhibitor will have a small silver medal.

Mr. N. Davis also offers prizes in some special classes of self-coloured varieties, and among the names of other donors are Messrs. Agate, Ray & Co., Godfrey, Webb & Sons, Hurst & Son, Daniel Bros., and Fidler.

The Chairman, Mr. P. Waterer, also offers the sum of £5 for the best essay on the rust, the same to consist of not more than 2000 words, to be type-written, and sent in to the Secretary by the 1st October. Messrs. T. W. Sanders, Massie, and Waterer will adjudicate upon the papers. For further particulars as to this and other matter contained in the new schedule, reference must be made to it when published.

On the motion of Mr. Bevan it was resolved that the silver-gilt medal be offered to the French N.C.S. for competition at the Lyons Chrysanthemum Show next November.

New members were elected, and local societies at Ipswich and Buxton were admitted in affiliation. A vote of thanks to the new Chairman brought the proceedings to a close.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE first ordinary meeting of the present session was held on the evening of the 8th inst., when the usual business transactions of the

Society were dispensed. Mr. John Haigh gave an essay upon bulb culture in the open ground, referring only to those bulbs suitable for outdoor cultivation in this district. Suitable varieties were enumerated, the bulk of them having been grown in the neighbourhood. Pots of Tulips were exhibited by the professional members, the result being that the prizewinners were Messrs. J. Dixon, Mr. Morton, and C. Scott, in the order of their names. The amateurs' exhibits were pot plants in bloom, when Mr. T. Lygo secured first and Mr. W. Donaldson second prize. Messrs. W. Artindale & Son of the Sharrow Vale Nursery exhibited (not for competition) a large collection of Tulips, principally La Reine, Thomas Moore, Rose Gris-de-Lin, and double and single Duc Van Thol, for which the Society's certificate was awarded. They also exhibited some beautiful Primulas. The meeting was presided over by Mr. John G. Newsham.

MAIDENHEAD CHRYSANTHEMUM SOCIETY.

THE second meeting of the above Society took place on the 9th, when Mr. Jas. Hudson, V.M.H., read a paper on "Orchard House Fruit Trees." There was a good attendance of members considering the very rough weather. The essayist dealt with the subject from every point of view, and also had plans of the orchard houses at Acton for the inspection of members. He grows nearly 1000 trees in pots, consisting of Peaches, Nectarines, Cherries, Plums, Apples, Pears, and Figs. After the trees are taken out of the houses, Melons are grown on hotbeds in some houses, Tomatoes in others, and Chrysanthemums and late Figs are put in after the Melons and Tomatoes are over, making it possible to obtain three crops in the year. At the close of the lecture a vote of thanks was proposed by Mr. Haylor, and seconded by Mr. Fulford. Mr. Richardson took the chair, and at the close of the meeting several new members were enrolled.—W. M.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—FEBRUARY 14TH.

THE exhibition at the Drill Hall on Tuesday last was one of the finest that we have seen for some time. The exhibits were so numerous that almost the whole of the tables were fully occupied with Orchids, miscellaneous plants and fruit. Apples and Pears were well shown, while Orchids were seen in bulk, and were characterised also by quality. The Floral Committee had many groups to examine, and some of them particularly were highly meritorious.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. G. Bunyard, J. Cheal, J. H. Veitch, J. Basham, G. Norman, W. H. Divers, A. F. Barron, S. Mortimer, A. Dean, C. Herrin, W. Bates, G. T. Miles, G. Wythes, H. Balderson, F. Q. Lane, J. Smith, J. Willard, W. Poupard, and the Rev. W. Wilks.

Messrs. G. Bunyard & Co., Maidstone, staged a grand collection of Apples. The individual dishes were equal to any seen in October, every variety being sound and in perfect condition. There were about sixty dishes, in as many varieties. It is almost a pity to individualise where all were so good, but Striped Beefing, Blenheim Orange, Warner's King, Annie Elizabeth, Belle de Pontoise, Stone's, King of Tompkin's County, Beauty of Kent, Allington Pippin, Bismarck, Gloria Mundi, Cox's Orange Pippin, Lord Derby, Loddington Pearmain, Sanspareil, and Lane's Prince Albert were equal to any seen at the Great Fruit Show.

Dr. R. Sisley, Ockford, Godalming, also sent a small collection of Apples, which were rather small, and many varieties, past their best. Messrs. J. Cheal & Sons, Crawley, exhibited an extensive display of Apples in a well-preserved condition. The best dishes were Lord Derby, Newton Wonder, Alfriston, Atalanta, King of Pippins, High Cannons, Bismarck, Beauty of Kent, and Bramley's Seedling.

Mr. J. Miller, gardener to Lord Foley, staged a fine basket of Mushrooms of the button type. Mr. G. Wythes, V.M.H., gardener to the Duke of Northumberland, exhibited fruit of Vanilla planifolia growing on a large stem of the plant.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. G. Nicholson, H. B. May, J. H. Fitt, R. Dean, E. Molyneux, J. Hudson, G. Gordon, J. Walker, C. E. Pearson, J. D. Pawle, C. Jeffries, J. W. Barr, R. W. Kerr, E. H. Jenkins, C. R. Fielder, T. W. Sanders, G. Beckett, E. T. Cook, D. B. Crane, H. J. Cutbush, H. S. Leonard, C. E. Shea, C. Blick, and G. Paul.

Messrs. H. Cannell & Sons staged a large exhibit of Primulas, consisting of 150 plants, to illustrate the decorative value of the plant. They were growing in 60-pots, and each plant carried several heads of bloom. The most noteworthy were Mrs. R. W. Cannell, white with dark foliage; Purple Star, Harlequin, a pretty, striped form; Lady Whitehead, a good white; Lady Emily Dyke, very floriferous, white; and Princess, a white Fern-leaved variety. Messrs. Barr & Sons, Covent Garden, exhibited a charming display of Primulas, Narcissi, Chionodoxa sardensis, hardy Cyclamen, and other flowers. The Daffodils were Golden Spur and maximus in the yellow trumpet class; white trumpets were represented by Princess Ida, W. P. Milner, and Mrs. Thompson, with numbers of N. minimus and N. cyclamineus.

Mr. H. B. May, Upper Edmonton, staged some remarkably fine plants of Begonia Gloire de Lorraine, arranged with well-grown plants of Adiantum Farleyense. Messrs. Collins Bros., Hampton, showed an extensive display of market Tulips. The bunches were large, and the

flowers in great variety. The most conspicuous were Grand Duke, Rosine, La Reine, Prince of Austria, Thomas Moore, Yellow Prince, Chrysolora, Scarlet Duc Van Thol, and Couronne d'Or.

Messrs. J. Veitch & Sons, Chelsea, exhibited a charming bank of single and double Primulas in a variety of colours. The best were Magnum Bonum, Gigantic Salmon, Chelsea White, Gigantic Blue, a very fine form; Gigantic White, Gigantic Scarlet, and Gigantic Rose in the single section, while the double mauve, salmon, scarlet, and blue were all exceedingly good. The same firm also contributed a tray of Rhododendron hybrids, comprising good forms of Minerva, Diadem, Conqueror, Hercules, Primrose, and Mrs. Heale. Mr. John May, St. Margarets, Twickenham, staged a grand display of Cyclamen, in 48-pots. The plants were very fine, with clean well-developed foliage, and carrying a quantity of excellent flowers in a good variety of colours.

Messrs. Wm. Paul & Son, Waltham Cross, contributed a superb display of Camellias in pots; also eight boxes of cut blooms. The plants in pots were well flowered, in fact they were literally covered with flowers. The old alba plena comprised the bulk of the display. Marchioness of Exeter, corallina, Exquisite, conspicua, and Rosy Morn were well represented by good specimen plants. The boxes of cut blooms contained excellent examples of L'Avenir, Countess of Derby, Reine des Fleurs, Lady Hume's Blush, Beauty of Waltham, and Princess Charlotte.

Messrs. Paul & Son, Cheshunt, exhibited plants of Calceolaria Burbidgei, the extraordinary Strelitzia regina with a fine spike of bloom, Hamamelis zuccarenia with its curious blooms, and a bunch of well coloured Marechal Niel Roses. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, showed a group of Lachenalia Nelsoni; the plants were beautifully furnished with flowers; also a basket of Cannas with variegated foliage.

Messrs. Sander & Co., St. Albans, staged a table of new plants, including some fine specimens of Acalypha hispida (Sanderi), A. Godseffiana in small pots, Dracaenas Sanderiana and Godseffiana; also a very fine form of Hæmanthus cinnabarinus var. superba.

Mr. F. Miller, 110, Fulham Road, contributed an effective display of floral decorations, comprising baskets of double Daffodils and various other forms of Narcissi, with Freesias, Spiræas, Lily of the Valley, and other spring flowers. Messrs. R. Wallace & Co., Colchester, arranged a small but interesting display of spring flowers, chiefly Irises verticillata, Bakeriana, Histrio, Histrioides, and Danfordia (a miniature yellow from Asia Minor), the white Chionodoxa Lucilia alba, and a gigantic Snowdrop, Galanthus Elwesi Whitalli. Mr. T. S. Ware, Ltd., Tottenham, exhibited a group of spring flowering plants, consisting of Narcissi in various forms, Crocus Sieberi, Hellebores, Orchis fusca, hardy Cyclamens, a pan of Leucoicum carpatum, also a pan of Gaultheria procumbens.

Messrs. J. Hill & Son, Lower Edmonton, staged a very fine exhibit of Ferns in pots and baskets. The collection included baskets of Pteris internata, P. nemoralis variegata, P. ensiformis Victoriae, and P. palmata, with good specimens of Davallia dissecta, Gymnogramma Veitchi, and Woodwardia radicans; also a group of a new Fern, Asplenium Hilli, a seedling from A. Belangeri x A. bifforme. Mr. Chas. Turner, Slough, sent a group of Malmesbury Carnations Princess May, the red flowering form. Mr. Jas. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury House, staged a plant of Lourya campanulata in flower, which presented a very curious appearance.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshaw, J. Colman, J. G. Fowler, H. Little, A. Outram, H. J. Chapman, W. H. Young, H. T. Pitt, E. Ashworth, W. H. Protheroe, W. Cobb, C. Winn, J. Douglas, S. Courtauld, E. Hill, and H. Ballantine.

A small group of Orchids was arranged by C. H. Feiling, Esq., Southgate House, Southgate. It comprised Dendrobium nobile, D. Wardianum, with Odontoglossums, Oncidiums, and such Cyripediums as Boxalli, Williamsi, Euryades, Harrisianum nigrum, and Measuresianum. The plants were clean and well flowered. Messrs. B. S. Williams & Son, Upper Holloway, were represented by a large collection of Orchids interspersed with Palms, Ferns, Oranges, Aralias, and other foliage plants. Amongst the most conspicuous of the Orchids were Cyripediums Sallieri, superbiens, nitens superbum, villosum, and Fitchianum; Dendrobiums in variety, Cœlogyne cristata, Odontoglossum crispum, O. Rossi, Calanthes, Cattleyas, and others. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, contributed a most interesting exhibit of well diversified Orchids. The plants were splendidly grown and carried numerous flowers. Amongst others were Odontoglossum pulchellum, O. Andersonianum; Cyripediums Conco-Lawre, Calypso Oakwood variety, Lathamianum, Calypso var. villosum giganteum, Lawrebel, villosum, Leeanum, and others; Dendrobiums melanodiscus, burfordiense, Thalia, Juno, Leechianum, nobile Burford variety, and melanodiscus Aurora; Masdevallia polysticha, M. Hincksiana, M. ignea, M. irrorata, M. i. Schröderiana; Lælia anceps Veitchi in superb form, Epidendrum Endriesi, and several others.

Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, arranged a number of charming Orchids in a very effective style. Cattleya Trianae was there in varying forms, with Dendrobiums infundibulum, Dulce, splendissimum, Cordelia, Euosmum virginale and Domini, Odontoglossums Wilckeanum and Andersonianum, Oncidium cheiroporum, several Cyripediums, and others. Phalaenopses formed the bulk of the group from Messrs. H. Low & Co., Bush Hill Park, and splendidly they were shown. There were also Cyripediums, Cattleyas, and Angræcum sesquipedale. Mr. F. Knight, Thundersley, Essex, showed Cattleya Trianae in variety, with Cœlogyne cristata.

Mr. Whiffen, gardener to F. Bradshaw, Esq., Southgate, sent a

number of Orchids, in which *Odontoglossums* and *Cattleyas* were most prominent. There were also *Cymbidium eburneum* and *Lycaste Skinneri* Enchantress. Small exhibits of Orchids were in abundance, and included plants from Messrs. H. J. Elwes, G. Moore, W. H. Young, de Barri Crawshay, Fisher, Son, & Sibray, F. Sander & Co., and E. Ashworth, with Sir W. J. Denton and others.

AWARDS.—Fruit Committee: Gold medal to Messrs. G. Bunyard & Co., and silver Knightian medals to Mr. G. Wythes and to Messrs. J. Cheal and Son. Floral Committee: silver-gilt Flora medal to Messrs. W. Paul & Son: silver Flora medal to Messrs. H. Cannell & Sons; silver-gilt Banksian medals to Messrs. Hill & Son and J. May, and silver Banksian medals to Messrs. H. B. May, J. Veitch & Sons, Ltd., and Collins Bros. & Gabriel.

CERTIFICATES AND AWARDS OF MERIT.

Apple Sanspareil (G. Bunyard & Co.).—A handsome Apple rather over medium size. It is decidedly conical, narrowing towards the apex. The sides indistinct angles, becoming more pronounced at the crown. The very small eye is deeply set in a narrow basin. The stalk is about half an inch long, and is set in a funnel-shaped cavity, which is lined with russet. The colour is a uniform clear yellow, flushed and splashed with red on the side next the sun (first-class certificate).

Cattleya Trianae Amy Wigan (W. H. Young).—A lovely variety. The sepals and petals are deep purple rose with a flush of crimson on the sepals. The fimbriated lip is deep crimson with a suffusion of purple (first-class certificate).

Cypripedium Orion (J. Veitch & Sons).—A chastely beautiful hybrid from *C. concolor* and *C. insignis*. The ground colour is cream throughout, deeper in the dorsal sepal, and flushed with rose in the petals. The spots over all are crimson, but larger on the dorsal sepal and minute on the pouch (award of merit).

Hippeastrum Sir William (Royal Gardens, Kew).—A superb variety, with large rich deep crimson flowers (award of merit).

Laelio-Cattleya warnhamensis Hypatia (Charlesworth & Co.).—This is very handsome. The rich orange of the sepals and petals, and the crimson maroon of the lip is most intense (award of merit).

Masdevallia falcata (W. H. White).—A fairly well-known form with orange coloured flowers, darker towards the margins (award of merit).

Narcissus Trimon (Barr & Sons).—A small flowered variety after the style of *monophyllus*. The colour is pale cream (award of merit).

Phaio-Calanthe Niobe (J. Veitch & Sons).—This bigeneric hybrid results from a cross between *Phaius grandifolius* and *Calanthe gigas*, and partakes of the character of both, but mainly perhaps of the former. The sepals and petals are rose, as is the outer portion of the lip; the throat is primrose (award of merit).

Phalanopsis Mrs. Jas. H. Veitch (J. Veitch & Sons).—This hybrid resulted from a cross between *P. Luddemanniana* and *P. Sanderiana*. The sepals and petals are yellow with a tinge of green and numerous crimson brown spots. The lip is white on the front lobe with yellow in the throat, and crimson markings (award of merit).

Rhubarb The Sutton (M. Butler).—A fine variety with long stems of good thickness, and excellent colour (award of merit).

STAPELIA PATULA.

THE reason is not far to seek why the members of this large and strange genus are so little cultivated by general collectors of plants. Known for a good reason as Carrion Flowers, the characteristic foetid smell of the flowers, large and even handsome as some of them are, is not agreeable, to say the least, to many persons. The plants are interesting and remarkable from several points of view, and deserve greater attention from the hands of those not too fastidious in scents. Belonging to a strange order *Asclepiadaceæ*, which includes the curious *Dischidia Rafflesiana*, the *Asclepias*, and others, they are far from the least curious of these anomalous species.

There are reasons for thinking that though the *Stapelias* have a considerable range in South Africa, they are gradually dying out. The natives eat them as food, and the introduced ruminants as sheep and goats, which are being bred in increased numbers, also feed off them. These causes have led to their proximate extermination near towns, and as the country becomes settled the same causes will act more largely. The seed being set exclusively by the agency of insects, any disturbance in the balance of Nature is likely to affect them prejudicially. But, apart from such eventualities, the curious succulent leafless stems, the flowers, with their curious and diverse coronal appendages, the hairs frequently found upon the disk and margins of the corolla, the marblings and generally lurid colouring of the same organ, separate them from the general run of succulent plants. There are no difficulties in growing them, either from seed or cuttings. A well-drained compost of sandy loam, with broken-up brick rubbish suit them. The seeds are singularly retentive of life, and germinate in from one to three days, retaining their vitality (many of them) for eight or ten years. If the plants are kept dry in the winter a short snap of frost is not harmful, and by placing them near the glass in the full sunshine they may be grown without artificial heat.

About sixty species are now included in the genus of *Stapelia*, though Mr. N. E. Brown, who has given much attention to South African plants, is of opinion that these are, many of them, only local forms or strains, or natural hybrids, and possibly only of an evanescent nature. Many of the so-called species are so connected by intermediate forms, blendings, and interminglings of characters, that the classification is attended with unusual difficulties, and this is doubtless the reason why the few botanists who have given attention to the genus vary so much in the species included. Only five were known to Linnæus, who gave the generic name after an Amsterdam physician. Masson, who was a collector for the then royal collection at Kew, published in 1796 drawings of forty-one species.

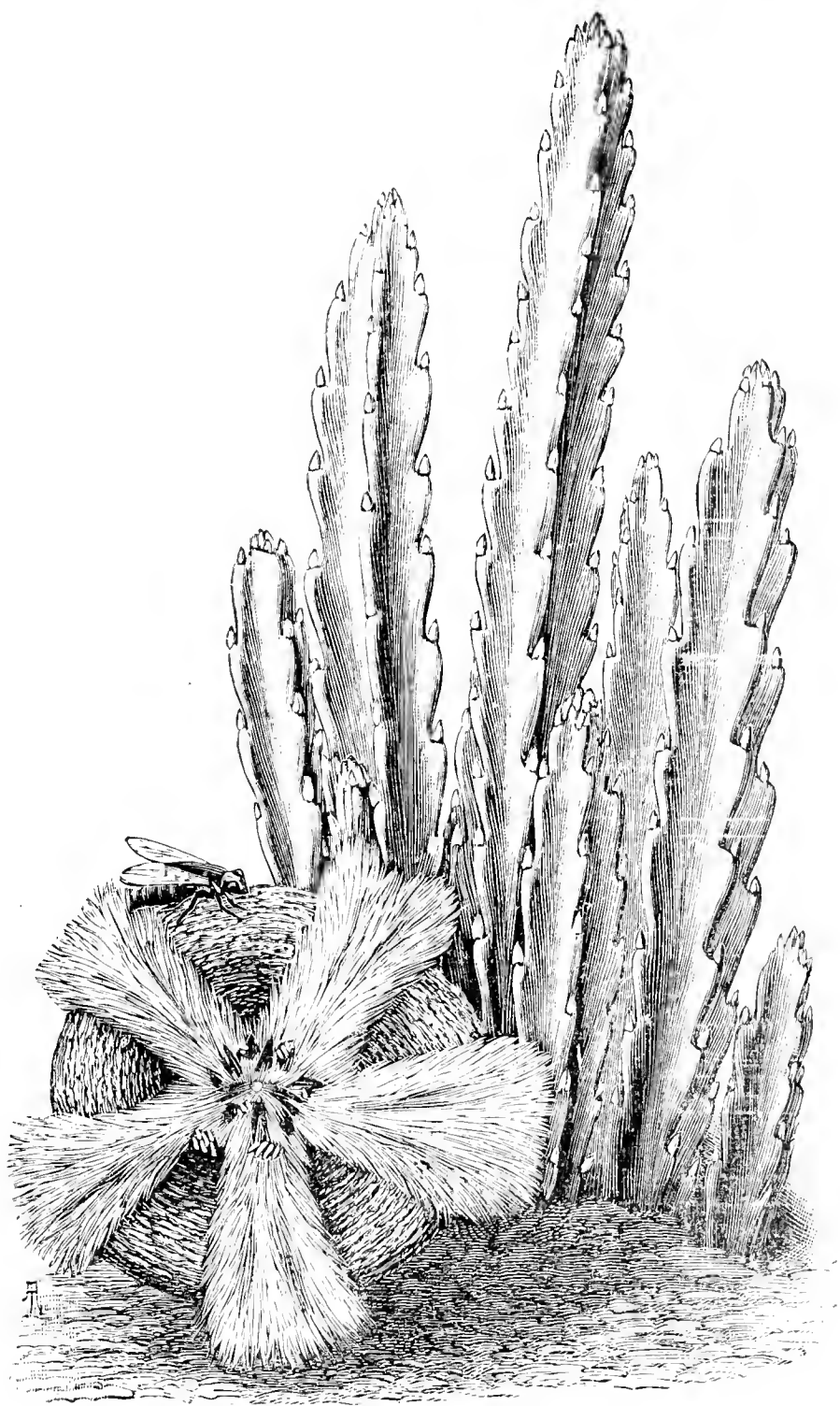


FIG. 25.—STAPELIA PATULA.

Jacquin in 1806, and Haworth in 1812, added more new species. About the same time the botanist Robert Brown broke up the genus into four, but later botanists as Decaisne, Bentham, and Hooker have brought most of them back into the genus *Stapelia*.

Stapelia patula (fig. 25) was named in 1809 by Willdenow. Three vicinities in South Africa within forty miles of each other in the neighbourhood of Mitchell's Pass are given as its habitat. Like so many of the *Stapelias* it is subject to considerable variations, and these run into by close gradations, forms described under other specific names, that Mr. Brown finds it impossible to give a set of characters which shall specifically separate them. *S. comata*, *S. unguipetala*, and *S. depressa*, according to this botanist, are possibly only forms of *S. patula*. The flower in the engraving, sketched when the divisions of the corolla had become reflexed, does not give the stellate appearance characteristic of the earlier stage. The mass of hairs thrown off by the margins and reflexed, are a dull pink in colour, the surface of the corolla is marbled in fleshy purples.



RECENT WEATHER IN LONDON.—Rain has fallen more or less each day since last Saturday, and the wind, on more than one night, has blown with terrific force. At intervals there have been bright gleams of sunshine, but on no occasion have they lasted very long. The morning of Tuesday was very wet, and showers fell afterwards, particularly in the evening. On Wednesday, at the time of going to press, it was fine.

— WEATHER IN THE NORTH.—The morning of the 7th showed 4° of frost. Thaw set in in the afternoon, and three very wet days followed. Saturday was fine, with heavy rain in the evening, and Sunday was, especially in the afternoon, fresh and springlike. Throughout almost all Monday rain was persistent and heavy, with a coldish wind from the east.—B. D., *S. Perthshire*.

— PRESENTATION TO THE AVIARY IN STANLEY PARK.—The inhabitants of the City of Liverpool in this poorer part will be glad to learn that Mr. William Cross, the celebrated naturalist of Liverpool, has offered to stock at his own expense the aviary presented to the city by Councillor J. R. Grant. This, with the handsome new Palm house presented by Mr. Yates Thompson, and which is being built by the well known firm of Messrs. Mackenzie & Moneur of London and Edinburgh, should stir up a great interest amongst the working classes, and make them appreciate the object lessons of nature and art brought close to their doors.—R.

— POTATOES AND LIME.—In talking with a gardening friend a short time ago, the subject in some way turned to the "noble tuber." "Oh," said my friend, "taters do no good in our garden, they grow so much top and come so badly at the root." Knowing what an old garden it was, I said, "You should use some lime." "Lime," said he, "what-ever's the good of lime for 'taters'! I don't believe in these new-fangled notions." I endeavoured to explain that the idea was not at all new—in truth, I had read in the *Journal* that the use of lime was known to the old Romans. "Ah," said my neighbour, "I suppose they did a goodish bit of building at one time." I hurriedly changed the subject.—SUBMERGED.

— READING GARDENERS' ASSOCIATION.—A very interesting lecture on "Destructive and Injurious Sawflies" was given on Monday evening last, the 13th inst., before the members of the above Association by Mr. P. H. Foulkes, B.Sc., Edin., of the Reading College. In introducing the subject, the lecturer said that Sawflies belonged to the order Hymenoptera, which included all those insects that had wings of a membranous character, and that this particular order was also divided into various classes. The Sawflies touched upon were the Apple, Gooseberry and Currant, Cherry and Pear, and the Turnip. Their time of appearing, method of attack, the best means to take for their prevention or destruction, and the various stages of growth were fully dealt with, the latter more particularly so, by the aid of several illustrations shown by the limelight. Many questions were asked, and ably answered, and an interesting discussion took place. A vote of thanks to Mr. Foulkes brought the meeting to a close.

— A FRIEND.—The following may be of interest to those who regard the toad as the gardener's friend. For some time past we have kept a toad in our stove, chiefly to assist in keeping down woodlice, and this it has done we are assured. But we are indebted to our "friend" in another way. In all our houses we are troubled, more or less, with what I take to be a minute species of ant, which feeds on the excrement of mealy bug and scale; various attempts to exterminate this little pest have proved fruitless. One night recently, while searching for a slug that had been making free with some Orchid blooms, I came across the toad, stationed at the base of an iron rod which supports the stem of a Stephanotis, and watching for a short time I noticed the toad thrust out its tongue repeatedly towards the rod. Curious to know the meaning of this I began to scrutinise, and then saw that the toad was licking off the ants, which were continually passing up and down the rod from the Stephanotis. The toad was left undisturbed, and the following morning was found at his post. Those who are acquainted with this ant may imagine the quantity a toad would consume in one night, and to see it feeding would, I think, assure the most credulous person that he is indeed a friend.—PARVO.

— EATERS OF THE IVY.—I have lately come to the conclusion that many more caterpillars than naturalists are aware of feed upon the Ivy during autumn and winter; they secrete themselves amongst its leaves and twigs to hibernate, and then occasionally nibble the younger portions of the plants; also, I have observed that when growing upon banks Ivy is at times considerably eaten by snails and slugs, though we should not have supposed it would have been food to their taste.—ENTOMOLOGIST.

— THREE GOOD NEW ANNUALS.—In looking through the enormous number of annuals in cultivation it would almost appear as if we had sufficient for all purposes, but improved types continue to appear, and three decidedly above average merit for beds are now mentioned. *Matriearia eximia* Golden Ball is a gem, and must be seen to be appreciated. It grows into a compact bush of about a foot high, and almost the same in diameter. The double quilled flowers are an intense golden yellow colour; in fact a Pompon Chrysanthemum in miniature would almost describe it. For a long border plant or for bedding it is admirable. Candytuft Rose Cardinal will be found a welcome addition to this popular family, the distinct rich rose cardinal colour showing to great advantage. Candytuft Giant Hyacinth-flowered white, is the third. The spikes of bloom sometimes measure over 7 inches in length. For cut flowers it will be found of great benefit, whilst it will quite supersede the old white variety for bedding.—R. P. R.

— TECHNICAL HORTICULTURE.—When at Kingston, on the 11th instant, was opened an exhibition of the work performed by students in the various County Council classes for plumbing, wood carving, modelling, painting, and other of the semi-mechanical arts, I could but wish it were possible to create, in the same way, an exhibition of what is being taught and accomplished in horticulture in the County of Surrey also. But the operations of gardening have to be conducted on the soil, and it is not practicable to take to any centre a few scores of the best boys' gardens, much less of allotments and cottage gardens, and show them as products of technical instruction. Indeed, it too frequently happens that all the training thus exemplified is so situated that its practical effects are seen by few but the actual workers, hence relatively few persons know what is being accomplished. This is specially the case with cottage gardens, many of the best of which lie remote from populous districts, whilst even groups of allotments in rural localities are seldom seen by visitors. In some few places, notably at Richmond and Surbiton, a walk round the allotments on Sundays is common recreation. That is not the rule in country districts. Very few persons, again, visit the boys' gardens, as these are usually found in enclosed grounds. But the cottager and the allotment holder, and here and there where the local people offer encouragement, the boys from their school gardens, have opportunities to display publicly at their local shows examples of their produce, the result of technical training. No doubt, could a great county exhibition of such produce be held in various county centres annually, the display would be a remarkable one, and would afford effective evidence of the value of the technical teaching in gardening which is furnished.—A. D.

— SHERBORNE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—At the last meeting there was a large attendance, and a splendid show of dessert and kitchen Apples. An excellent address was given by Mr. Crook, of Forde Abbey Gardens, on "Profitable Fruit Culture." Before dealing with his subject he made reference to the death of the late Mr. W. G. Pragnell, the head gardener at Sherborne Castle, and spoke in very high terms of the deceased, whose acquaintance he had enjoyed for about thirty years. He also remarked that his successor was also an old friend of his, and held a high position in the gardening world. Referring to fruit culture, he asserted that this country was increasing in its demands for good fruit and vegetables, and for anyone who cared to embark in the cultivation there was a good opening. He maintained that Cox's Orange Pippin, the qualities of which it took the English thirty years to recognise, had been pronounced by expert judges to be the best Apple of the day, and a man who understood his business would not sell it for less than 2s. per dozen. The West of England was one of the best parts in this country to grow fruit; but what did they find in their orchards? Miserable relics. If they planted Apples like the Cox's Orange Pippin they would make money instead of sending it out to America, Tasmania, and California. He had seen Blenheim Oranges in the Yeovil Market for which 3d. per pound was asked, and he had gathered 110 lbs. of fruit off of a Lane's Prince Albert, which was only 7 feet high and 7 feet in diameter; and another tree, Seaton House, which was introduced from Scotland, and bears early, would pay to grow. Mr. Crook also gave hints on storage, and concluded a very interesting and practical address, amidst applause.

— **Meteorological Observations at Chiswick.**—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1899.										
February.										
Sunday .. 5	S. E.	deg. 36.5	deg. 35.8	deg. 39.5	deg. 30.5	0.02	deg. 36.0	deg. 40.0	deg. 44.5	deg. 30.0
Monday.. 6	S. E.	39.5	36.8	45.8	35.6	0.41	37.0	39.7	44.3	30.5
Tuesday 7	S. S. W.	46.5	45.8	50.2	36.0	0.13	38.0	39.8	44.8	31.8
Wed'sday 8	S. W.	50.6	48.7	53.8	46.3	0.24	41.8	40.8	43.8	43.5
Thursday 9	W. S. W.	50.5	47.8	58.6	47.3	0.18	43.7	42.2	43.8	43.0
Friday ..10	S. S. W.	57.9	50.0	64.4	50.3	—	45.2	43.3	44.1	47.8
Saturday 11	S. S. W.	52.0	47.9	54.5	50.2	0.09	46.3	44.3	44.4	43.6
MEANS, ..		47.2	42.9	51.9	40.4	Total 1.07	41.1	42.0	44.3	38.9

Rain fell on six days, Monday's being very cold and mixed with snow and sleet; wind changing from south-east to south-west. On Friday the sun was very warm, the thermometer registering 64° in the shade.

— **WEATHER AT CHISWICK.**—We are pleased to learn that what might be termed an ancient feature of the historical gardens of the Royal Horticultural Society has been resuscitated. For many years Chiswick was a meteorological station, and the reports were acceptable to the gardening community. Great care has been taken in the equipment of the resumed section and in the accuracy of the instruments provided under the personal supervision of Mr. Edward Mawley, late President of the Royal Meteorological Society. As the Superintendent of the Gardens is an old and careful observer the tabulated returns may be relied on as correct. We are very much obliged to the Royal Horticultural Society for supplying them for the information of our readers.

— **FEBRUARY WEATHER—A DIFFERENCE.**—On Thursday last, the 9th inst., the thermometer in London rose to a maximum of 58°, or 12° above the average for the time of year. According to submarine telegraph the day's record in New York was 2° below zero, and at Chicago 30° below zero. The next day, the 10th inst. (last Friday) the report from New York was 6° below zero. At Chiswick on the same day, as will be seen by the above returns, the shade thermometer registered perhaps the warmest 10th of February recorded there, as it was at Camden Town for forty years. We are inclined to prefer the February weather of the Old Country—this year, at least; but four years ago (February 8th, 1895) the thermometer in London fell to within 7° of zero. At Belvoir on the same day the register was 3° below zero. We may add that the cold was greater on several days last June, also on three in July, the 6th, 10th, and 29th, than on the warm February Friday indicated.

— **THE MILD AND WET WEATHER.**—Only a short time since we were rejoicing over the touch of cold weather which for a few days prevailed, and which we hoped would serve to keep vegetation in check. But it has been speedily succeeded by such a turn of soft mild weather, that the temperature is more that of May than of February; thus all our earlier anticipations are overthrown, and the sudden warmth following upon the short cold touch, which gave the lovers of skating an illusory hope, and enabled some needful ice to be housed, so sudden a reaction rendered matters worse rather than better. There is no checking all sorts of things now, and we may well look with anxiety to the ultimate outcome of the variable weather. February has at length justified its old appellation of "fill-dyke," for rivers, streams, brooks, and ditches have of late been full to overflowing.—OBSERVER.

— **HESSLE GARDENERS' SOCIETY.**—At a meeting of the above Society held on the 7th inst., Mr. F. Mason presiding, Mr. Lambert of the Burton Constable Nurseries read a paper on "Fruits for Exhibition," dealing concisely with all the different kinds which are to be found on the exhibition tables. He gave a list of varieties which he had found most useful in his own locality, both for early and late shows. By special request of the members he also gave the members his views respecting the different stocks used for grafting and budding. There was an excellent discussion, which was entered into with much zest and enthusiasm by the members present. There were several questions put to the essayist which were answered in an able manner. The usual vote of thanks brought a very instructive meeting to a close.—J. T. B., Hesse.

— **ASPARAGUS NOTES.**—On page 102 "W. S., Wills," speaks of the value to young gardeners of an article on the above subject by Mr. Shalford in a previous issue. In one establishment, in which I served as a junior, Asparagus refused to succeed; but I think if the method of disposing of the garden refuse, and planting on the surface (as recommended by "W. S., Wills") had been adopted, the difficulty to a certain extent might have been overcome. The culture of vegetables is, I fear, at times neglected by our young men, whose minds have been in numerous instances filled with temperatures, ventilation, and other matters connected with work under glass; and while in no way wishing to deprecate the value of all such things, the time is sure to come to most of these embryo gardeners, when a thorough knowledge of outdoor work will be valued.—KITCHEN GARDENER.

— **POTTING TOMATOES.**—I can endorse the remarks of "Practice" (page 101) regarding the advantage of potting Tomatoes deeply. It is the only way, and placing them in a light, warm, airy position, of keeping the young plants sturdy. From the very first, when the seedlings are ready to be removed from the pots or pans in which they have germinated, they show this tendency to emit roots from the stems. The stronger the seedlings are the more roots appear to be ready to develop. Therefore it is not only with spindled plants from autumn cuttings that the practice of deep potting should be adopted, but also with spring raised seedlings. Most growers when finally placing Tomatoes in their fruiting pots sink them very low down, so that soil may be added round the stems from time to time and new series of roots formed. These strengthen the plants and cause them to be fruitful by the additional vigour imparted. This important fact is well known to all experienced Tomato growers. Still it may not be clear to some of the younger growers. Any who have not proved the value of the reliable practice indicated should try the suggestion of your correspondent, who does well to call attention to the matter. Potting seedlings to the seed leaves is also alluded to by Mr. Abbey on page 91.—E. D. S.

— **SCIADOPITYS VERTICILLATA.**—One occasionally sees and reads of very fine specimens of the Umbrella Pine, as it is commonly called; but experience proves that this Conifer will not flourish everywhere. Twenty years since two trees of it were planted in the ordinary soil of this garden, no special preparation being made beforehand. The staple is a strong loam on the surface—in fact, it is stiffer than would commonly be known as loam. The subsoil is not actually clay, but it is a close approach to it. The surface soil is highly impregnated with chalk, much of this having been employed in years gone by for surface dressing. The plants alluded to lived it is true, but made no progress for several years, so they were lifted and replanted in a compost of a sandy character. Instead of improving, they dwindled distinctly. Thinking to put new life into them I transplanted them to another part of the garden, first preparing the stations carefully by removing the whole of the soil 2 feet deep. At the bottom of each hole a layer of drainage was put and a compost of peat, leaf mould, decayed vegetable refuse, and turf. The trees were carefully watered when necessary—in fact, no pains whatever were spared to induce the trees to grow, but after fifteen years trial both turned yellow, and were ultimately burnt.—E. MOLYNEUX.

— **ILLICIT COMMISSIONS.**—In concluding a speech of, for him, unusual gravity, delivered at Kingston on Saturday last, the Lord Chief Justice of England stated that so much did he feel the mischief done to British trade and investments through the giving of what he described as illicit commissions, that he purposed shortly to bring in a Bill in the House of Lords making the granting of these commissions illegal. What the noble Lord may mean by illicit commissions was not made clear, although it is very probable that he had in his mind some recent revelations of a very foul financial nature. But I have been wondering whether it is probable such a Bill would in any way meet certain cases which seem to have cropped up in connection with the horticultural trade. The subject is one very difficult to refer to; but whilst there has been much correspondence and no end of grave complaints made in certain directions concerning commissions, there does not appear to be any great objection offered to the payment of such as may be moderate—that is, about 5 per cent., and it may be advisable to do so for inducing early settlements. But what seems to be complained of is, that in the keen race of competition, some traders offer, through their circular, or by private letters, or through agents, to give 10, 15, and even 20 per cent. commission. Most certainly such commissions cannot be properly offered, and seeing that their object is to tempt the largest possible orders, and to take away honest traders' customers, such offers seem to me to come under Lord Russell's term illicit.—D.

— "PHYSIOGRAPHY."—I am pleased to note that "Erica," of "The Young Gardeners' Domain" (page 114), has had the good fortune to study the above grand work by the eminent Professor Huxley. It is one of the most wonderful scientific works I have yet read, setting out as it does in understandable language the marvellous forces at work in the whole universe, and especially in our own land. That portion which treats of geology is perhaps the most interesting and useful to gardeners, as it teems with information which one may daily turn to practical account. "Physiography" is a book to read once and study ever after.—H. D.

— A COMMON ERROR—"Observer," page 86, does well to draw the attention of readers to the subject of fixing the wires for the training of Vines, Roses, and other plants too closely to the glass. No crop will exhibit the effect of this practice more quickly than Melons and Cucumbers growing in a house where the leaves are nearly touching the glass. Seldom, indeed, can either pass through a season of growth without loss of many of the leaves by scorching, owing to lack of air in sufficient quantity to dissipate the condensed moisture that collects on the upper surface of the leaves. The wires in the Cucumber and Melon houses here were fixed 17 inches from the glass. In practice, however, even this distance is too near for vigorous-growing varieties. Foliage of any kind, whether that of fruit trees or plants, is more liable to a loss of colouring matter—chlorophyll—when growing near to the glass.—E. M., *Sussexmore*.

— A STAG IN A GARDEN.—The proverbial bull in a china shop is the metaphorical creator of the proverbial smash. A visitor of a somewhat similar nature was that unfortunate stag which, driven by the Royal buckhounds recently to seek a harbour of refuge from the baying dogs, looked to find it in the gardens of the Countess de Morella, Virginia Water, and getting into the walled garden with the pack at its heels and the huntsmen a long way behind. The local papers tell of there being in the garden two long parallel forcing pits, about a yard apart, covered with glass lights. As the stag was driven about it leaped one range of lights and went crash into the other, smashing the glass and cutting itself fearfully. Getting out, it again repeated the exploit, with again shocking results. Could the poor mangled animal have spoken as freely as doubtless the gardener did, we might have well imagined what it would have said. Alas! that so shocking a sight should be tolerated in our country.—A SURREY GARDENER.

— GARDENERS AND SPECIALISTS—DEAR CABBAGES.—At the annual dinner of the Lincoln Gardeners' Association held last week, Dr. G. M. Lowe presided over a company of about seventy members. The Rev. C. C. Ellison, in proposing success to the Association, seems to have pleased the gardeners by allusions to what he described as "unfair" claims on them, and recounting his experience with Cabbages. He is reported to have said:—"All the delicious fruits and vegetables we possessed, and the other knick-knacks a cook required were provided by the gardeners; it was they who provided the flowers that decked the bridal procession; it was they who provided the flowers which were one's last tribute to the dead, and yet they were a most ill-used body; and for this reason—people were too exacting. Take the members of his own family for example. One girl would come back from a visit somewhere and say, 'I have seen such splendid Tulips; why can't we have Tulips?' Well, she would go and worry the gardener, and it would end in £4 having to be spent in Tulips. Then another would come home and say, 'I have seen such lovely Petunias, why can't we have Petunias?' and so the thing went on. They went to specialists in one flower, and then came home and wanted to find in their garden 50,000 specialists rolled into one. That was exceedingly unfair, and he thought himself if a gardener made the best use of the facilities he had it did him the greatest credit. It was always a great delight to him to find a man with limited means produce anything exceptionally perfect, and one day when looking round a small garden in Derbyshire he highly praised the owner on his success in growing tremendous Red Cabbages, and told him he had not anything nearly so large even in his own garden. As a matter of fact he had not any at all. The man promised to send him one or two after a time, and he (Mr. Ellison) one day had actually to pay 3s. 6d. carriage for two Red Cabbages. And that was not all, for the cook pickled the monstrous things, and his meat bill went up 35 per cent., the family having to eat so much more meat to get the pickles put out of sight." There seems also to be a "Dahlia and Aster Society" in the ancient city, which has been celebrated by a largely attended dinner. The object of the Society is to "increase the interest in the cultivation of Dahlias, Asters, Stocks, and a few other flowers such as adorn the gardens of the working classes." The annual shows are said to have been very successful over a period of five years.

— CORRECTION.—"W. G." writes:—"Kindly make the following correction in your next issue—viz., that in my remarks on John Cox and Napoleon's Willow on page 105 I inadvertently used the name John instead of David, thus implying there may have been two famous Birmingham painters of the name Cox."

— SEEDLING COLEUS.—Large as are the number of varieties of named Coleus at present in cultivation, many of them are superseded by the beautiful forms appearing from the purchase of a packet of seed. I am now referring more especially to the large leaved varieties, which are splendid in habit and of great importance for decoration. When in Ireland last summer I almost marvelled at the glowing shades of leaf colouring and their charming formation. On making inquiries, I was told that the plants were from seed, the strain being The Sunset, which I believe is of American origin. To anyone purchasing a packet of this particular strain and sowing at the present time in sandy soil, in warmth, I can assure them that they will be amply repaid for their trouble.—R. P. R.

— FORCING NARCISSI.—I notice from the report of the meeting of the R.H.S. at the Drill Hall on January 31st, not the least interesting exhibit was that of forced Daffodils and Poet's Narcissus. The display would doubtless impress still further on those who saw it the usefulness of this class of flowers for forcing purposes. We have got so used to depending on Holland for our supply of spring bulbs that the possibilities of providing for ourselves with English grown bulbs has perhaps been overlooked. It is questionable, however, whether this will be so in the future. The taste for Daffodils and other spring-blooming bulbs has taken a firm hold on the flower-loving public, and it is surprising that the adaptability of our soil for their growth has not been found out before. It has been proved that home-grown Narcissi lend themselves readily for forcing, and it is not unlikely that their chaste and elegant forms will supplant the stiff and formal Dutch Hyacinth.—H. G.

— BULLFINCH SLAUGHTER.—Thirty or forty years ago, bullfinches and goldfinches were not at all uncommon amongst the orchards of North Kent; now, in this district, they seem to be extinct. The goldfinches have been ruthlessly captured by London dealers, some also of the bullfinches, but that species has suffered more from the guns of gardeners and fruit growers, having long had a worse character than it deserves. All its friends must admit that a bullfinch will make free with a ripe Cherry or Plum, and it will attack buds, yet, on the other hand, it is certainly a feeder upon insects. No one who has seen the eagerness with which one will devour the aphides held to it on the tip of a moist finger can doubt that these pests form part of its natural food. Very likely, too, its visits to buds are prompted by an appetite for the caterpillars and grubs lodged in many of them. As with others of the finches, the diet is mixed, but the bird is so docile, affectionate, and sagacious in confinement that it may well appeal to our kindly feelings towards the race, even if it does some harm.—J. C., *Gravesend*.

— ROCK PLANTS AT ABINGER HALL.—At Lord Farrer's seat near Dorking an extensive rockwork, one of the home-made description, and therefore, as a rule, far more suitable for all sorts of hardy plants than very elaborate ones are, had when I looked over it on the 9th some early and very interesting things in bloom. Crocuses Imperati and Sieberi, both of blue shades, were charmingly flowering; so also was Cyclamen coum. The pretty Ionopsidium acaule was flowering also, and had been in bloom nearly all the winter. Of Snowdrops, Galanthus Elwesii was blooming here and all about the grounds, so also was the yellow Aconite, which was occasionally seen in large quantities. Strange was it to see Sarracenia purpurea doing well outdoors, and whilst bearing numerous good pitchers, also exhibited rich colouration. Iris stylosa with stylosa alba, and I. histrio were flowering charmingly, the former having been so for some few weeks previously. It is a most valuable plant to produce very early flowers. A pretty Primrose is named Primula olympica, the flowers being of a pale purple colour. Very early in bloom, too, were Saxifragas Boydi, white, very small cushion-like plants; also Frederica angustifolia, yellow. Very strange, and evidently unusual, was it to see Primula rosea growing in great quantities round the margin of a pond, the roots quite in the water, and apparently liking it. P. japonica also was doing wonderfully well under the same cold water treatment. The rockwork includes a remarkable variety of alpines. Numerous Dianthus, Aubrietias, Tiarella cordifolia, Alpine Phloxes, Lithospermums, white Primroses, Hellebores, Gypsophila prostrata, Omphalodes verna, and many others. Mr. Payne, who made and planted the rockery, has every reason to be proud of his construction now that it is so well furnished.—A. KINGSTON.

PEACHES AND NECTARINES.

(Concluded from page 101.)

WE now come to the fruit thinning, which should be done with discretion. If the trees are healthy there is not much fear of the fruit dropping during the stoning process, especially if they are not allowed to suffer for want of water. Therefore I should not advise many more fruit being left to go through that period than are to remain to ripen. If the fruits are about 9 inches asunder each way the crop will be a good one, and will be quite sufficient for an ordinary tree to carry.

As soon as the fruits commence to swell after stoning, frequent applications of liquid manure will be beneficial. If liquid cannot be had, a little chemical, such as a handful of guano spread round the trees and well watered in about once or twice a week, will be of assistance. A mulching of half-decayed manure will help to retain the moisture in the soil in hot weather. Remove all foliage covering the fruit, so as to encourage the development of colour, and when signs of ripening are apparent syringing must cease, the trees being kept as dry as possible to prevent cracking of the skin.

Gathering ripe Peaches requires the utmost care, the slightest bruise will show, and the value will be lessened proportionately. Nectarines are not quite so tender, but they, too, must be judiciously handled. Some growers prefer to gather the fruit before it is quite ripe and thus obviate damage, but I do not agree with that except for packing purposes, as the fruit has not the flavour it would have if left on the tree to finish. The best plan, I think, is to have a shallow box lined with wood wool. When picking get the fingers well under the fruit and gently raise it; if it is ripe it will fall into the palm of the hand and can be placed in the box, not allowing the fruit to touch one another. In a cool house or room they will keep for several days.

I will now say a little regarding enemies and diseases, taking the black fly first, which will appear as soon as the buds begin to burst. Out of doors this is difficult to combat, especially when it appears so early. I have found that a sheet over the tree, and fumigating as well as possible, if not a sure cure, will keep the little intruders at bay until liquid insecticides can be used. Green fly is the next, but it does not appear until the shoots commence to push. It is frequently encouraged by a check through cold winds and draughts. The pest can be eradicated by carefully syringing with some approved insecticide. Thrips and red spider are easily kept away by frequent syringings of clean water during hot weather, while brown scale can be dealt with when the trees are dormant by painting with a solution of soft soap and paraffin thickened with clay or cow manure. Weevils are very destructive, and must be searched for at night and picked off.

Mention having been made of the insects, I will turn to the diseases, and mildew—to which some sorts are more addicted than others—must have primary attention. Cold damp weather is the most general cause of this disease, or a cold border, but in either case flowers of sulphur dusted over the affected parts is a good and simple remedy. Syringe the trees thoroughly to wash the sulphur from the fruit. Gumming is often caused through too rich a soil, which is conducive to sappy wood that does not ripen sufficiently. Fruit cracking at the stone, as in the previous case, is the result of rich soil, or over-supplies of food, or damp weather at the period of the second swelling.

Having dealt with outdoor culture, let us turn to the forcing house. If we require Peaches ripe about the first week in May, the house must be closed by Christmas. The trees should be pruned, painted if necessary, and tied back in their places. Rake off the old surface soil, or if this is too full of roots, lightly loosen with a fork, and apply a coating of loam, mixing with it a little lime rubbish, wood ashes, and chemical manure. This having been done, the borders should have a thorough watering. If the house is closed a week or so before Christmas, heating can commence with the new year, and must be done sparingly at first, the temperature not being allowed to rise higher than 50° to 55° by day, and 45° to 48° by night.

Frequent syringings of tepid water should be given to aid the buds in swelling, and little if any air will be required, unless the sun is very warm, until the flowers are open, when the syringing must stop, and the house be kept as dry as possible. Abundance of air should be admitted when the weather permits, but avoid draughts. Gently shake the trees about midday until the fruit is set. When this period is reached, the temperature can be slightly raised, renewing the sprinkling to remove the decayed flowers. The disbudding and tying must be done precisely the same as with trees out of doors, while syringing ought to be attended to twice daily, damping round the pipes and dry corners to prevent red spider and thrips.

Watering should not be neglected, trying as nearly as possible to use water of the same temperature as the house. Discretion must be exercised in thinning the fruit, retaining those on the top of the trellis where they will get most sun and light for colouring. As soon as the stoning process is over a little harder forcing can be commenced,

feeding the trees occasionally. If good stable manure is available shake out the droppings and put a layer of straw on the border, as it saves the fruit from bruising if it should drop, and keeps the borders moist during hot weather. As soon as the fruit shows signs of ripening syringing must cease, and all leaves covering fruit should be removed. Admit air night and day, as Peaches develop a better flavour when steadily ripened. When the trees are cleared of fruit cut out all old bearing wood and shorten long slender shoots. Apply plenty of water at the roots, and well wash down with a hose, if available, three or four times a week. If root-pruning is thought necessary it ought to be done as soon as the wood is ripe and the leaves fall.—S. H. SNELL, *Fruit Farm, Torquay.*

SOIL ANALYSES.

ON my introduction of the subject, under "The Soil," page 455, previous volume, I had hoped, on feeling myself supported by the Editor in his footnote, that correspondents would have enriched the field, instead of that a side issue seems to have been introduced.

In respect to "English Gardener," instead of chopping words I prefer to limit myself to referring him to my earlier suggestion, on page 48, that the utter want of homogeneity of the soil he works, as judged from his experience from ten analyses, all varying materially, would render the application of a gardener's instinct requisite to direct the management, in place of analysis primarily.

If I now abandon matters as unprofitable, and of no advantage to horticulture, I thus should like to resume that common sense tells me about the existence of various soils from the remote recesses of the creation as well as from disintegration and denudation. Hence analysis of the soil becomes an interesting question.

In this we have no need to go the length of the materials used for pot experiments. There are manifestly large stretches of alluvium, composed of endless variety of materials from disintegration of manifold rocks filling river areas from encircling watersheds, as is done to this day in the annual Nile deposits in Egypt, and there analysis of the soil is destined to figure usefully, as it may in numberless other areas.

The "Times" of 15th September last said, in reference to agricultural research, that the feature deserving of special mention was the arrangement made by the Dorset County Council for an exhaustive series of analyses of typical soils by the Agricultural Department of the Reading College. I presume such varying analyses would be discussed as part of the instruction, and the most fertile among these be extolled, which in any inquisitive mind would result in the query: "I wonder what my soil would prove to be like were I to analyse?"

Mr. Cousins himself thinks necessary to say in his primer that, if his little book has a special gospel to preach it is that of lime; and when asking why are these or other crops deficient, the answer is, because in nine cases out of ten lime is deficient, which, he adds further on, is the chief basis of fertility of the soil. It is thus, according to this authority, a fact that not more than one in ten gardeners, when deficiency of crops occurs, have thought of lime in time. I presume because analysis was considered unnecessary.

I find some authorities holding that analysis of the soil is analogous to the utility of the compass to the sailor. Indirectly yes. But the sailor requires his chart and sextant to render his compass most useful, and it is rather these that are the equivalents of an intelligent system of analysis of the soil. In the result of this discussion I should like to find my place among a body of gleaners in all that the soil produces on that broad expanse of common sense, broader than the British Empire.

It may be interesting generally on this topic to hear what Professor Meldola wrote a couple of years ago as to the character of contributions by writers who are not experts. He said that they were often capable of taking a wider and more philosophic grasp of a problem than a pure specialist, and ideas of lasting value had sometimes emanated from such sources. He adds that his object is to claim more consideration for such writers as a class on the part of practical workers, and thinks that the philosophical faculty is quite as powerful an agent in the advance of science as the gift of acquiring new knowledge from observation and experiment, and that it is not often that the faculties are combined in one individual.

My aim in contributing is of a constructive order to the edifice, and not destructive, except to rule-of-thumb methods.—H. H. R., *Forest Hill.*

[We have abridged this communication as we have all others on the subject; and as we think "An English Gardener" will find as much in the present rejoinder with which he may be disposed to agree as he would be likely to find if the controversy extended over six months, and as it has already reached the "Nile," it may well cease.]

PROGRESS AND PROSPERITY.

THOUGH the actual end of this nineteenth century is not yet with us, we have not now long to wait for the time when the papers of the universe will teem with articles on the world's progress or retrogression during the past one hundred years. That horticulture will have a prominent position in any records of this nature goes without saying, and the writer's task will be no easy one who commences an essay on "The Century's Progress in Horticulture." But while immeasurable strides have been made in gardening during that period, the results attained to in more limited spaces of time can be termed nothing short of marvellous, and the pen of a fluent writer in the hands of a student would find no mean task in taking the century in decades, and treating of the rise and fall of particular plants. Someone will probably undertake this work, and if it be done properly it will form as interesting a series of articles as has ever appeared in the columns of the gardening press. It cannot, however, yet be said what this dying century may bring us, but it will be something more than miraculous if the paragraph respecting Orchids that went the rounds of the daily papers a week or two ago prove true. Let us trust it will not, or all our Orchid works will need to be rewritten.

It is not proposed now to attempt such a task as that just outlined, but to glance at the advance that has been made in Primulas and Cyclamens during the years 1879 to 1898 inclusive. To further reduce the scope of the undertaking only one firm's work will be noticed, that of the great Reading house of Sutton and Sons. From the fact that 1879 is given as the primary date it must not be inferred that the cross fertilisation of Primulas and Cyclamens did not commence at Reading previously—indeed, for a very extended period prior to that the work was being pressed forward with judgment and discretion. This particular year is specified simply because it marked an epoch in the progress of Primulas, for it was then that Ruby King was given forth in all its striking beauty. It was the attainment of prosperity after assiduous labour, and from then till the present progress and prosperity have gone hand in hand, for no year passed that did not bring some speciality that was an advance on its predecessors in at least one respect.

That this same Ruby King was a Primula of Primulas is more than proved by its popularity to-day, for since its inception scores of varieties have come and gone. They have remained for perhaps half a decade or less, and then have sunk to oblivion. True, few of the varieties from Reading have received this fate, as the care in testing every one before it is placed in commerce is so great that when a variety does come it is to stay. As typical to a certain degree of the improvements that have been made look for a moment at the illustrations (figs. 26 and 27). The former depicts the Star Primula of to-day, the individual flowers of which will convey an idea of what material was in bygone days available. Then observe the second photographic reproduction, which portrays Sutton's Giant White Primula, and a rough estimate can be drawn by anyone. In the latter there is every desirable attribute that goes towards the making of a perfect Primula. It must, of course, be borne in mind that the modern Star is far more floriferous than *P. sinensis*, and in forming judgment the flower alone is examined.

On a parallel with Ruby King, in age as well as in excellence, is Pearl, which, needless to say, is white in colour. Looking some weeks back at a number of plants *en masse* in one of the Reading houses the conviction that it remains one of the finest was forced upon us. The

habit of the plant is splendid, both in the leafage and its mode of carrying the flowers. But too much space must not be given to the old-timers or the amount available will be exhausted, with consequent neglect to those which, if they have not reached their majority in years, have passed it in other more important respects. To those whose fancy trends in the direction of large, symmetrical, substantial flowers, with correspondingly handsome foliage, must be commended the giant section. As a class these plants were not at their best when this visit was paid, but sufficient examples were in evidence to warrant the highest eulogium on the white, pink, and crimson varieties. The plant (fig. 27) admirably represents the first named. For late flowering these Primulas are invaluable, and make a most striking display over a very considerable period, this being longer or shorter in accordance with the system of culture adopted.

Belonging to the same section of *Primula sinensis* as Ruby King and Pearl there are a larger number of varieties from which to make a

selection, and all are of different habit from the giants just mentioned. Here we have compactness of growth in the plants, with floriferousness, refinement, and a more diversified range of colouration. Broadly speaking the flowers are from medium to large in size, very stout in the petals, some plain and others fimbriated, but all closely approaching to an ideal form. As the most striking of the whole must be named Crimson King, which is quite a new one that is placed in commerce for the first time this year. It is remarkable as well for its persistent blooming tendency as for the intensity of the velvety crimson colour, the effect of the flower being decidedly accentuated by the black band that encircles the yellow centre. The richness of the bold trusses standing well above the clear green leafage entitles Crimson King to be styled a perfect Primula. What is perfection at the present may not hold that rank next year, but it is more than probable that the one now referred to will hold sway over several years. No one, however, knows what the Reading firm will produce, so it is not wise to make predictions.

Comparable with Crimson King, and notwithstanding its super-excellence, fit associates for it are Rosy Queen and Purity, whose specific names tell their particular hues. The softness of the tone of the former, its freedom of flowering, and its fine habit justify every word that has been from time to time said about it. Of Purity no more need be added than that it is wholly worthy of its name. As one trio has now been formed we would fain suggest another

that will be little less striking than its predecessor, though it will not include an 1899 variety. It shall comprise Sutton's Reading Blue, Reading Pink, and Gypsy Queen. Of the first named it can justly be said it is a blue, and that the large yet refined flowers over the charming green-leaved plant place it amongst the most desirable Primulas in cultivation. The shade of colour in Reading Pink is peculiarly fascinating, and it is exceptionally profuse in the production of its flowers. What reader of the *Journal of Horticulture* desires a description of Gypsy Queen? None, for it is assuredly one of the most widely known and universally appreciated Primulas in cultivation. Then there are Reading Scarlet, which, seen in a mass, seems to glow with fiery brilliancy, and Snowdrift, which for earliness has no compeer. Others find a home at Reading, and do their share towards the magnificent display, but they must wait for another year ere receiving individual mention.

Double Primulas have long enjoyed a favour that is not accorded to all plants, but their beauty is such as commends itself to everyone. Go where one may, in large places or in small, double varieties of Primulas



FIG. 26.—PRIMULA SUTTON'S STAR.

are seen in varying stages of excellence, and they meet with general admiration. That they are valuable, nay indispensable, in the winter is recognised, and it is only natural their widespread popularity should ever increase. Needless to say Messrs. Sutton & Sons have exerted themselves to enhance the beauty of this as well as the single section, and with unqualified success. The flowers of their strains have size without coarseness, richness of colour with refinement, and a constitutional strength that practically insures success in growing them. The colours represented are scarlet, pink, blue, crimson, white, and carnation flaked. Each has its admirers, and there are many persons, who like the writer, swear allegiance to the whole of them. One of the varieties of the future is a double prototype of Crimson King, if it maintain the promise now manifested which, must prove of the greatest excellence. But time alone can settle the point, and it is one of the many Primulas at Reading towards which many eyes are turned in pleasurable anticipation.

To go to Reading in January to formulate notes of the Primulas and neglect the Cyclamens *in toto* would be an unpardonable omission, for they are no whit less interesting, beautiful or excellent. The thousands of plants form an object lesson in Cyclamen culture that might be advantageously studied by many growers, though it does not follow that they would afterwards be qualified to attain to such results. The plants are almost wholly quite young, and are flowering in 5-inch pots. From the corms of all of them rise stout footstalks, carrying thick, handsomely marbled leaves, and from 150 to 200 flowers, a few plants having a diameter of upwards of 20 in. From these figures the practical reader can imagine what a picture was displayed for the visitor's admiring gaze. Not a single stake for the support of flowers or leaves was discernible, simply because artificial support is not requisite where the inherent strength of the plant was sufficient. Obviously excellence of culture has great effect on the results achieved, and everyone must admit that as a cultivator as well as a hybridist Mr. James Martin is a man among men.

With these as with Primulas there are two clearly defined sections—namely, *C. persicum* and *C. p. grandiflorum*. Both classes are worthy of a place in every establishment, but individual taste must decide which shall be the more extensively grown. The large leaves and bold upstanding flowers of the latter must command admiration from all. There is not in the leafage that beautiful marbling that is characteristic of the *persicum* section, and for which alone the plant might advantageously be grown. Then the smaller flowers are more freely produced, and are perhaps of a more refined type. Be this as it may, the forms of *grandiflorum* known respectively as White, Cherry Red, Crimson, and Crimson and White are magnificent, and will only be equalled in the estimation of some observers by Pink, Rose, and Purple. It resolves itself into a matter of individual tastes, and very fortunately everyone does not think alike.

In the *persicum* section there are two which stand far above the others from our point of view, and they are Salmon Rose and Vulcan. Of the former we should honestly say that it is the best Cyclamen in cultivation, for its qualities are such that there remains nothing to be

desired. Vulcan, too, with its intense dark crimson flowers is a plant that ought to be found in bloom in every garden in January, and as much before and after that time as the skill of the cultivator will allow. White Butterfly is exquisitely beautiful, as are scores of others to which varietal names have not been attached. But late though it may now be, let all who can go at once to Reading to see and to admire, and to mentally, at any rate, corroborate all that has been said in the preceding notes.—H. W.

NOTES ON PEAS.

BOXES *versus* POTS FOR EARLY SOWING.

PERHAPS another method of raising Peas under glass adopted by the writer may prove interesting, in addition to those given on page 89. It

consists of the use of a primitive type of flower pot, used largely in some establishments in the north and mid-land counties, and known as "collars." These are made very cheaply by brick and tile manufacturers, and are formed by cutting an ordinary 3-inch clay drain pipe into three portions prior to baking.

The collar is placed perpendicularly on a firm bench, and a square of turf rammed tightly into it to make a bottom. A round piece of wood a little smaller than the interior of the pipe is used for this purpose, and after placing a thin layer of soil over the turf, a few peas are sown, and these, again, are covered with soil. The pipes are then placed close together on a moist foundation in a cold house or frame until the peas germinate and the hardening process commences. The roots by planting time have not only taken possession of the soil, but have also penetrated the turf bottom, and in order to remove the plants without undue injury a round piece of wood is again brought into use large enough in circumference for the pipe to slip over it.

Then by taking the latter in both hands, and fixing the ejector in a perpendicular position, the plants may be pushed out of the collars with a little pressure, and without damage. The Peas are then planted closely together in the rows,

and after results have proved this to be an economical and convenient way of treating the earliest sowings of these vegetables made under glass. These substitutes for flower pots are also used largely for bedding plants in the spring, raising Sweet Peas and other annuals, as well as early sown Greens and Onions.—H.

FOR years I have adopted the plan of raising Peas under glass to enable us to gather pods earlier than was possible when sowing in the open. I have long since come to the conclusion that 3-inch pots are the best receptacles for sowing. To obtain an early crop of such varieties as Duke of Albany or Duchess for a show in July it is almost impossible to obtain them by ordinary sowing in the open.

Much valuable time is then gained by sowing five seeds in a 3-inch pot in a cool vinery or Peach house, and better results will accrue if the plants, without disturbing them separately, are shifted into 5½-inch pots in tolerably rich soil. Place a few twiggy stakes around the side of the pot,



FIG. 27.—PRIMULA SUTTON'S GIANT WHITE.

and to these the tendrils will cling. Numerous roots are made while the growth is vigorous and healthy. When planting time comes around the plants are fully 1 foot high and especially healthy, and start at once into free growth. The sowing of a quantity of Peas in small pots may entail more labour; but I am sure the efficacy of the system well warrants the extra trouble involved.—E. M.

PEAS AND VERMIN.

AS attention is now being turned in the direction of Pea sowing, precautionary measures have to be taken in many places against mice and other vermin which devour the seeds whilst they are in the ground. A few years ago it was my lot to have to grow Peas in a kitchen garden partially surrounded by a wood. Out of this natural shelter the sharp-pointed field mice came in great numbers, and were responsible for the spoiling of more than one promising row of Peas by extracting the germinating seeds from the ground and partially devouring them. Baited traps were set, and many of the pests caught, but still the mischief continued until a simple preventive was adopted, and proved successful in stopping the ravages of the mice.

The *modus operandi* consisted of placing dry powdered red lead in a shallow box. The peas just prior to sowing were moistened with water and rolled about in the powder. The moistening causes the red lead to adhere to the peas, and in that condition they were scattered in the drills. I never knew the dressing to have any effect on the germination of the seeds, though I have heard the matter questioned as to this. The method of treatment is simple, and proved quite successful in checkmating the mischievous creatures which caused such annoyance before its adoption.—G.

CONSUMPTION OF POTATOES IN THE UNITED KINGDOM.

THE Potatoes consumed in this country are for the most part of home production, imported varieties constituting only a very small proportion of our annual supply. The area devoted to the cultivation of this vegetable in the United Kingdom is, according to the latest agricultural returns, about 1,200,000 acres, whereas thirty years ago, when the returns were first collected, the extent of land similarly cultivated was estimated at 1,600,000 acres.

The loss of 400,000 acres in the total area is mainly due to a large contraction in the Irish acreage. In England and Wales there has been comparatively little change, the slight decrease in the principality being more than counterbalanced by an extension in England. Relatively to population, the British area now represents an acre for every sixty-eight persons of the population, compared with an acre for every fifty persons thirty years ago; while in Ireland, where a partial abandonment of the crop has been to a large extent consequent upon a reduction of the population, the personal ratio is now roughly equivalent to an acre for every seven persons, as against an acre for every five at the earlier period.

Estimates of the quantity of Potatoes produced in the United Kingdom, exclusive of the Channel Islands and the Isle of Man, have been published annually since 1884; but for Ireland alone estimates of production are available for the past thirty years. The average estimated yield per acre during the past five years for the entire country has been 4.62 tons. The Potato fields of Great Britain alone yielded in that period 6.05 tons per acre; but in Ireland the average crop per acre turned the scale at only 3½ tons.

Our average requirements of Potatoes for all purposes would appear from the above figures to amount to about 5,500,000 tons yearly. Of this quantity all but 3 per cent. is furnished by the home production.

The Channel Islands and France are the principal purveyors of the small imported supply. From the former we receive annually nearly 60,000 tons, and the consignments from France amount to between 40,000 and 60,000 tons in the year. The imports from the Channel Islands consist almost entirely of early varieties which reach our markets before the British crop is ready for lifting, and consequently command a higher price. Their average declared value in recent years has been from 9s. to 9s. 6d. per cwt., whereas the French cargoes have usually been valued at 5s. to 6s. 4d. per cwt. Germany, Holland, and Belgium are the more important of the other countries distinguished in the trade returns as exporters of Potatoes to this country.

The total exportation of Potatoes from the United Kingdom to all countries last year only slightly exceeded 24,000 tons.—("Journal of the Board of Agriculture.")

— SWEET PEAS.—Where a quantity of these charming flowers is required through the summer for decorative purposes, it is well to insure an early supply of bloom by commencing with plants raised under glass. Some growers advocate sowing out of doors early in February, but my experience is that the seeds invariably lie in the soil some time before germinating, and the tiny seedlings are in danger of slugs and other enemies as soon as they show through the surface. I therefore prefer to fill a number of 4-inch pots about half full of old potting soil, and on this scatter about half a dozen seeds, covering them with soil nearly up to the rim of the pots. The latter are then placed close together in a frame or near the glass in a cool house. They are grown cool and retain a sturdy habit till they can be safely planted outdoors. Treated in this way no enemies affect them, and earlier flowers are obtained than by sowing outdoors.—G.

ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING OF FELLOWS.

THE meeting of Fellows at the Society's offices on Tuesday afternoon, under the presidency of Sir Trevor Lawrence, Bart., was a moderately large one. Amongst those supporting the Chairman were the Rev. G. H. Engleheart, Sir J. T. D. Llewelyn, Bart., and Sir W. T. Dyer, with Messrs. T. B. Haywood, H. J. Veitch, H. J. Elwes, C. E. Shea, and P. Crowley, while in the body of the room were amongst others Messrs. G. Paul, G. Bunyard, G. Wythes, G. Gordon, H. J. Pearson, C. E. Pearson, J. Willard, R. Dean, A. Sutton, H. Selfe Leonard, H. Turner, W. P. Wright, H. H. Raschen, A. Dean, and J. Douglas, the two latter being appointed scrutineers of the ballot for the election of members of the Council.

REPORT OF THE COUNCIL FOR THE YEAR 1898-99.

THE year 1898-99 has been one of increased prosperity for the Society.

The Council have felt justified in spending a considerable amount on the Lindley Library, namely £170, to assist the Trustees in completing and publishing a catalogue of the library, and also in purchasing various books which the catalogue showed to be wanting.

The catalogue was published in December at a price of 2s. 6d., in the hope that many Fellows would purchase it, not only to inform themselves what books the library contains, but also because it forms in itself a sort of reference list to the bibliography of gardening. Some Fellows might also take note of books still wanting to the library, with a view to presenting them.

During the past year valuable books have been presented by the Director of the Royal Gardens at Kew, Dr. Maxwell Masters, F.R.S., T. J. Bennett-Poë, Esq., Miss Ormerod, Mrs. Holborn, Signor Alnio, and many others, to all of whom the best thanks of the Society are due. A full list will be published on April 1st in the Society's Journal, vol. xxii., part 4. Acting in conjunction with the Trustees, the Council have purchased for the library:—"The Silva of North America," Prof. Sargent; "The Flora of Northern America," Britton and Brown; "Nature," from its commencement, fifty-six vols.; "Flora of Tropical Africa," "Flora Germanica," Reichenbach, twenty-two vols.; "Flora Pyrenaica," Bubani; "Atlas des Plantes," Bois; "The Water Garden," Tricker; "Flora of Berkshire," Druce; "Chemistry of the Garden," Cousins; "Garden Making," Prof. Bailey; "British Orchids," Webster; and others.

Under the head of ordinary expenditure at Chiswick, £1850 has been spent on the general work and maintenance of the gardens. Amongst other work, house No. 9 and the potting shed attached thereto have been painted and thoroughly repaired, houses Nos. 3, 14, 16, and 21 have all been repaired and painted, as have also many of the frames. All this work has been done by the Society's own staff of men. The receipts by sale of surplus produce amount to £357, making the net ordinary cost of the gardens £1493.

At Westminster twenty-two Fruit and Floral meetings have been held in the Drill Hall, James Street, Victoria Street, and seven Committee meetings have been held at Chiswick, besides the larger shows in the Temple Gardens on May 25th, 26th, and 27th, and at the Crystal Palace on September 29th, 30th, and October 1st. Lectures have been delivered at nineteen of the meetings. The number of awards granted by the Council, on the recommendation of the various Committees, has been as follows:—

AWARD.	At Provincial Shows.	Affiliated Societies.	On Recommendation of				Total.
			Fruit Committee.	Floral Committee.	Orchid Committee.	Narcissus Committee.	
Gold Medal ...	1	—	5	5	3	—	14
Silver-gilt Flora ...	3	—	—	32	7	—	42
Silver-gilt Knightian ...	—	—	16	—	—	—	16
Silver-gilt Banksian ...	1	—	5	34	—	—	40
Silver Flora ...	4	14	—	70	12	5	105
Silver Knightian ...	—	—	22	—	—	—	22
Silver Banksian ...	6	26	28	74	28	3	165
Bronze Flora ...	1	8	—	6	—	—	15
Bronze Knightian ...	—	—	—	—	—	—	—
Bronze Banksian ...	—	22	5	12	5	1	45
First-class Certificate ...	1	—	11	26	31	4	73
Award of Merit ...	—	—	49	167	68	8	292
Botanical Certificate ...	—	—	—	3	16	—	19
Cultural Commendation ...	—	—	32	3	23	—	58
Total ...	17	70	173	432	193	21	906

In addition to the above:—One silver-gilt Flora medal has been awarded to Miss O. Harrison for having passed first in the Society's examination and four Hogg Memorial medals have been awarded; eighty-five bronze Banksian medals have also been granted to Cottagers' Societies.

The Council are fully aware (as all Fellows visiting the Drill Hall shows must also be) how very meritorious the groups of flowers, fruits, vegetables, &c., are, and how thoroughly, as a rule, they deserve the medals recommended by the Committees. The Council entirely recognise

the difficulty of the work of the Committees in decreasing the number of medals they recommend. At the same time they feel it their duty to urge upon all the Committees, and upon the individual members thereof, the necessity of gradually but continually raising the standard of excellence which they set before themselves in recommending awards.

Another point which the Council desire to suggest to the Committees, is whether groups exhibited by the horticultural trade, and groups exhibited from amateurs' gardens should be judged by exactly the same standard of excellence? Whether, except in cases of open competition for prizes, some slight favour should not be shown to encourage the latter?

During the past year the Society has been presented with the dies of a very fine medal, which has been struck, and subscribed for by numerous friends in memory of the late Dr. Robert Hogg. The Council have decided to restrict the use of this medal to the Fruit and Vegetable Committee, with which Committee Dr. Hogg was so intimately and specially connected from its very foundation in 1858.

On Tuesday, July 5th, the Council invited all the members of the several Committees to lunch with them at Chiswick, and to examine the Gardens. An account of the proceedings will be found in the Journal, vol. xxii., page 237.

An International Conference on hybridisation has been arranged for July 11th and 12th, 1899, to commence with a luncheon at Chiswick, to which all the Committees of the Society will be invited, and to close with a banquet in the Whitehall Rooms, Hotel Metropole, in honour of the distinguished foreign guests who are expected to attend the Conference. Full particulars concerning the Conference will be found in the Society's Book of Arrangements for the year 1899. Any Fellows desiring to be present at the banquet, and wishing for tickets for ladies or gentlemen, should communicate with the Secretary before July 1st. The price of the tickets will be 21s.

The Council desire to draw the attention of all Fellows of the Society to the more extended use which the Scientific Committee might be to them if they availed themselves more freely of their privileges in submitting instances of diseases of, or injurious to plants, caused by insects or otherwise. The Scientific Committee is composed of gentlemen qualified to give the best advice on all such subjects, either in respect to the prevention or cure of disease. The Committee is also glad to receive specimens of any subjects of horticultural or botanical interest.

That Fellows, whether near or at a distance, may derive as much benefit as possible from their connection with the Society, the Council last year appointed Dr. J. Augustus Voelcker, M.A., Consulting Chemist to the Society. They have renewed their arrangement with him, whereby all Fellows who are amateurs or *bonâ fide* gardeners may obtain at very small cost analyses of manures, soils, &c., or advice as to what description of chemical manure will be most suitable and profitable for application to any particular soil. The Council wish again to draw particular attention to the following points, viz:—

- (i.) That Fellows desiring an analysis must follow explicitly and exactly the directions laid down in the Book of Arrangements, 1899; and

- (ii.) That Fellows who are in any way commercially interested in any artificial manure trade or horticultural business cannot claim Dr. Voelcker's assistance as Fellows, but if they wish to consult him must do so in the ordinary way of business.

The Society's Great Show held in May (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was as successful as ever, and it is a matter of satisfaction to the Council to find that this meeting is now universally acknowledged to be the leading horticultural exhibition of this country. The best thanks of the Society are due to all who kindly brought their plants for exhibition, or otherwise contributed to the success of this Show.

The exhibition of British grown fruit, held by the Society at the Crystal Palace on September 29th, 30th, and October 1st, was, considering the very unfavourable season, most satisfactory. Full particulars will be found in vol. xxii., part 4 of the Journal, which will be issued in the course of a few weeks.

As an object lesson in British fruit cultivation this annual show stands unrivalled, and is of national importance. The Council invite Fellows and their friends to support it, for it cannot be too widely known that the continuance of the Show is absolutely dependent on at least £100 being raised by subscription each year towards the Prize Fund. The Show involves the Society in a very large expenditure without the possibility of any return. The Council have therefore established the rule that they will not continue it unless sufficient interest in it is taken by Fellows and their friends, to provide £100 towards the Prize Fund. Subscription for this purpose should be sent at once to the Secretary, 117, Victoria Street, Westminster, and if the list prove satisfactory the schedule will be issued in April, and the Show held on September 28th, 29th, and 30th, 1899. The list of subscribers for 1898 will be published in part 4 of vol. xxii., of the Society's Journal.

A deputation was sent by the Council, at the invitation of the local authorities, to attend the Great Summer Show of the Northumberland, Durham, and Newcastle-on-Tyne Botanical and Horticultural Society in July. Full particulars of this visit will be found in the Society's Journal, vol. xxii., p. cxiii. The Council desire to record the very great pleasure which this visit gave them, and their appreciation of the great courtesy and hospitality with which they were received.

An invitation has been received and accepted for sending a small deputation to visit a show of Daffodils and other early spring flowers and produce, to be held at Truro on the 21st and 22nd of March, 1899.

The Journal of the Society has been continued so as to enable Fellows at a distance to enter more fully into, and reap the benefits of the study and work of those actively engaged at head-quarters. Vol. xxi., part 3, and parts 1, 2, and 3 of vol. xxii., were issued during the year, and vol. xxii., part 4, will be ready on April 1st.

It is gratifying to record that the inquiry for the Society's Leaflet on Fruits for Small Gardens, Cottagers, and Farmers, continues. An entirely new and enlarged edition has been published, and may be obtained at the office at cost price.

The first edition of the **Book of Rules for Judging and Hints to Schedule Makers** which the Society drew up in 1896, has been exhausted. They have therefore been revised and reprinted, and an Appendix on Point-judging and Point-value has been issued. Price 1s. 6d.

An examination in the principles and practice of horticulture was held on April 5th, concurrently in different parts of the United Kingdom, a centre being established wherever a magistrate, clergyman, school-master, or other responsible person accustomed to examinations would consent to superintend one on the Society's behalf, and in accordance with the rules laid down for its conduct. No limit as to the age, position, or previous training of the candidates was imposed. One hundred and ninety candidates presented themselves for examination. The names and addresses of those who succeeded in satisfying the examiners, together with the number of marks assigned to each, will be found in the Society's Journal, vol. xxii., page 94.

It is proposed to hold a similar examination in 1899, on Tuesday, April 11th. Candidates wishing to sit for the examination should make application during February to the Secretary, R.H.S. Office, 117, Victoria Street, Westminster.

The thanks of the Society are due to all the members of the Standing Committees—viz., the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees, for the kind and patient attention which they have severally given to their departments.

The thanks of the Society are also due to all those who, either at home or abroad, have so kindly presented plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's Journal, vol. xxi., part 4, 1899, which will be issued on April 1st.

The Council wish to express, in their own name and in that of the Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the fortnightly meetings in the Drill Hall. They are glad to find by the increased and increasing number of visitors that the Society's fortnightly meetings are becoming better appreciated by the Fellows and public in general.

A desire having been expressed that the so-called fortnightly meetings should be actually fortnightly throughout the whole year, it will be found by referring to the Book of Arrangements, 1899, that the Council have acceded to this request as far as it was possible to do so, having regard to such obstacles to absolute regularity as the Temple and Crystal Palace Shows, and the occurrence of Bank Holidays.

The papers read at these meetings, which have been or will shortly be published in the Journal,* are as follows :—

March 22nd, "Soils," by Mr. J. J. Willis, F.R.H.S.
 April 12th, "Insect Blights and Blessings," by Mr. F. Enock.
 April 26th, "Sweet Scented Leaves," by Mr. F. W. Burbidge, M.A., V.M.H.
 June 14th, "Hybrid Orchids," by Mr. J. O'Brien, V.M.H.
 July 12th, "Garden Peas," by Mr. N. N. Sherwood, V.M.H.
 July 26th, "Uses of the Bamboos," by Mr. A. B. Freeman Mitford, C.B.
 August 9th, "Water Lilies," by M. R. Latour Marliac.
 August 23rd, "Perpetual Strawberries," by M. Henry de Vilmorin.
 September 7th, "Disas," by Mr. T. W. Birkinshaw.
 September 20th, "Suburban Fruit Growing," by Mr. W. Roupell, F.R.H.S.
 October 25th, "Experimental Horticulture," by Mr. G. Gordon, V.M.H.
 November 22nd, "Garden Manures," by Mr. A. D. Hall, F.R.H.S.
 January 31st, "The Orchards of Nova Scotia," by Mr. Cecil Hooper, F.R.H.S.

Besides these lectures, the Rev. Professor Henslow, V.M.H., has most kindly given six floral demonstrations, short accounts of which have appeared in the Journal.

The following table will show the Society's progress in regard to numerical strength during the past year :—

[illegible]

* Back numbers of the Journal can be purchased by Fellows at reduced rates.

The Council have the sad duty of recording the death of forty-seven Fellows during the year, and among them they regret to find the names of Baron Ferdinand de Rothschild, M.P.; Lord Newton, Mr. Christopher Sykes, the Earl of Selton, the Earl of Lathom, Lady Cromer, Lady Repton, Sir Richard Quain, Sir Stuart Knill, Bart.; Sir James Bain, Hon. E. S. Parker Jervis, Professor Dr. Allman, Mr. Latimer Clarke, M. C. Bernardin, Dr. Johan Langé, Rev. D. A. Beaufort, Dr. T. Anson, Mr. H. M. Matheson, Mr. G. T. Clarke, Mr. Edmund Tonks, Mr. Charles Sharpe, Mr. T. B. Potter, and others.

A scheme for the affiliation of local horticultural societies was put forward in 1890, and 100 local societies have availed themselves of it. The Council express the hope that Fellows will promote the affiliation of local horticultural and cottage garden societies in their own immediate neighbourhood.

At the request of some of the Fellows, the Council have arranged to

send a reminder of every show (in the week preceding it) to any Fellow who will send to the R.H.S. Office, 117, Victoria Street, Westminster, twenty-four halfpenny post-cards, fully addressed to himself, or to whomsoever he wishes the reminder sent.

The Council recommend that (with the exception of the Secretary) the salaries of the principal officers of the Society—the Superintendent, the Cashier, and the Assistant-Superintendent—should continue as heretofore. The Secretary having now completed ten years of service to the Society, the Council recommend that an addition of £50 a year be made to his salary.

The programme for the ensuing year will be found in the Arrangements for the year 1899, lately issued to all Fellows.

Subjoined is the usual revenue and expenditure account, with the balance-sheet for the year ending December 31st, 1898.

ANNUAL REVENUE AND EXPENDITURE ACCOUNT FOR YEAR ENDING 31st DECEMBER, 1898.

Dr.		
To ESTABLISHMENT EXPENSES—		
Salaries and Wages	£471 10 0	
Rent of Office	173 3 0	
Printing and Stationery	231 11 11	
Journal—Printing and Postage	1041 0 0	
Postages	118 19 3	
Coal and Gas	4 4 7	
Donation to Auricula and Primula Society	10 9 0	
Miscellaneous	124 4 1	
Commission on Advertisements, Journal, &c.	27 3 1	
Painting Orchid Pictures	17 1 0	
	<u>£2218 16 11</u>	
„ VICTORIA MEDAL (Diploma)	34 14 0	
„ LINDLEY LIBRARY	169 4 1	
„ SHOWS and MEETINGS—		
Rent of Drill Hall and Cleaning	£108 10 0	
Temple Show	663 3 2	
Crystal Palace Fruit Show	316 4 11	
	<u>£1087 18 1</u>	
„ PRIZES and MEDALS—		
Rose Show	£50 10 0	
Committee Awards, &c.	220 3 9	
Expenses Floral Meetings and Conferences	36 14 4	
Labour	83 8 4	
	<u>£390 16 5</u>	
„ CHISWICK GARDENS—		
Rent, Rates, Taxes, and Insurance	£231 12 4	
Superintendent's Salary	200 0 0	
Pension, late Superintendent	180 0 0	
Labour	779 5 7	
Implements, Manure, Soil, Packing, &c.	166 14 0	
Coal and Coke	208 8 9	
Repairs	55 12 9	
Water and Gas	16 13 11	
Miscellaneous	70 19 8	
	<u>£1909 7 0</u>	
	<u>£5810 16 6</u>	
„ BALANCE to GENERAL REVENUE ACCOUNT	1293 7 4	
	<u>£7104 3 10</u>	

		Cr.
By ANNUAL SUBSCRIPTIONS		£1249 16 6
„ SHOWS and MEETINGS—		
Temple Show	£1408 16 11	
Crystal Palace Fruit Show	242 15 6	
Drill Hall Meetings	37 17 0	
	<u>£1689 9 5</u>	
„ ADVERTISEMENTS in JOURNAL	400 6 4	
„ SALE of JOURNAL	60 7 4	
„ MISCELLANEOUS RECEIPTS	34 3 4	
„ DIVIDENDS—		
Davis Bequest and Parry's Legacy	£56 18 4	
Consols, £1750	46 0 8	
Local Loans, £1700	49 6 0	
	<u>£152 5 0</u>	
„ INTEREST on DEPOSIT	27 11 9	
„ PRIZES and MEDALS	53 4 3	
„ CHISWICK GARDENS—		
Produce sold	£358 16 10	
Students' fees	31 10 0	
Admissions	3 9 6	
Miscellaneous receipts	43 3 7	
	<u>£436 19 11</u>	
	<u>£7104 3 10</u>	

We have examined the above accounts, and find the same correct.

(Signed) HARRY TURNER,
ALFRED H. PEARSON, } Auditors.
JAMES H. VEITCH,

HARPER BROS., Chartered Accountants,
10, Trinity Square, Tower Hill, E.C.

9th January, 1899.

BALANCE-SHEET, 31st DECEMBER, 1898.

To SUNDRY CREDITORS	£36 16 5
„ SUBSCRIPTIONS, 1899, paid in advance	£130 14 6
„ ADVERTISEMENTS, 1899, paid in advance	4 7 0
„ CRYSTAL PALACE SHOW, 1899, paid in advance	2 2 0
„ ROSE PRIZES, 1899, paid in advance	5 5 0
„ LIFE COMPOSITIONS, 31st December, 1897	£548 14 0
Do. do. 1898	333 18 0
	<u>£882 12 0</u>
„ GENERAL REVENUE ACCOUNT—	
Balance, 1st January, 1898	£4575 5 10
Less Loss on (unpaid) Subscriptions, 1897	11 11 0
	<u>£4563 14 10</u>
„ Balance for the year 1898, as per Revenue and Expenditure Account	1293 7 4
	<u>£5857 2 2</u>
	<u>£6918 19 1</u>

We have examined the above accounts, and find the same correct. (Signed)

9th January, 1899.

By SUNDRY DEBTORS—	
Annual Subscriptions outstanding estimated at	£5 5 0
Garden Produce	40 1 7
Advertisements	131 11 4
Rates and Taxes (Chiswick) paid in advance	20 15 5
Interest on Local Loans	12 6 6
	<u>£209 19 10</u>
„ INVESTMENTS—	
2½ per cent. Consols £2122 8s. 9d. cost	£1892 11 3
(£2022 8s. 9d. of this sum is held by the Society, subject to the provisions of the will of the late J. Davis, Esq.)	
2½ Consols £1750 cost	£1768 5 0
3 per cent. Local Loans £1700	1922 12 0
	<u>£5583 8 3</u>
„ CASH AT LONDON AND COUNTY BANK—	
On Current Account	£121 7 9
On Deposit Account	1000 0 0
„ PETTY CASH IN HAND—	4 3 3
	<u>£1125 11 0</u>
	<u>£6918 19 1</u>

HARRY TURNER
ALFRED H. PEARSON } Auditors. HARPER BROS., Chartered Accountants,
JAMES H. VEITCH } 10, Trinity Square, Tower Hill, E.C.

In moving the adoption of the report and the financial statement, which were taken as read, Sir Trevor referred to a few of the leading points in the report, which is given in full herewith. He spoke of the excellent status of the Society, of the splendid work done by the Secretary and other officers of the Society, and accorded a generous word of praise to the members of the various Committees. The fact of the Lindley Library having now been put in proper order was the subject of a few remarks, which included a well deserved tribute to Dr. M. T. Masters (who was

unhappily prevented from attending owing to indisposition), for his assistance in supervising the work done by Mr. Hutchinson. The crowding at the Temple Show was alluded to, as was the decision to reduce those immense displays that “were nothing short of gigantic advertisements.” One or two other items were brought prominently forward, but the state of affairs is so satisfactory that little had to be said. Sir W. T. Dyer seconded the adoption of the report, and was followed by Mr. H. J. Elwes, who spoke with force on one or two points, more particularly alluding to the Library and the awarding of medals.



SEASONABLE NOTES.

IN my notes, appearing in the issue dated February 2nd, I am made to say, "By no means prune until the end of *next* month." This would, strictly speaking, be March. I have no doubt the majority of readers will at once have realised that those notes were necessarily penned in January. Had it struck me at the time how far advanced we were in that month, I should have said February instead of "next month." When noting that little slip, it occurred to me that a few more seasonable notes might be given, and my main points in the present shall be upon pruning.

When to prune is a puzzle to many, because we have really good growers at variance with each other upon this point. For myself, I fully believe that more than half of our Roses are pruned from two to three weeks earlier than is beneficial, or that will bring us the best results. Too often we find our forward growth cut back by a late frost, and either irreparably injured, or so crippled as to give indifferent results. In reality we do not gain anything by premature pruning, because when Rose growth can move freely from the first, it develops quite as soon, and often before that which received a more or less severe check. By too early pruning we get growth from the best eyes or buds upon our plants, which we naturally cut back to.

This is why we prune—viz., to secure growth from the buds most likely to give us the best flowers. The whole operation and object of pruning lies in this fact. We know that all Roses break most freely from the terminal eyes upon each growth; and when these get active and forward, many are too anxious to prune. But if we are premature with the knife, we are only making our best and selected eyes the terminal ones upon the growths left, and often push them along too early. The second week in March for hardy varieties, and the first in April for those we know to be rather tender, are the dates I would choose.

Some growers prune very closely indeed when compared with others. In this respect we want to remember the purpose our Roses are to fill. If fewer blooms and higher quality are wanted, we need to prune considerably harder than if a number of medium quality are wished for, simply for decoration, whether in the garden or house. I am convinced that our so-called "Garden Roses," whether of climbing habit or not, are pruned much too closely. Especially is this the case with all climbers and others of extra vigour. Thin out the older wood in this case, and merely tip the longer rods of last year's growth. It does not matter whether they are growing upon walls, pillars, or are to be pegged down, there can be no question but what the most vigorous growth of the previous season is the most valuable during the coming summer, and I always endeavour to make as much room as possible for these rods.

The pruning of medium growers needs little comment. Here it is merely a question of shortening the growths more or less according to their strength; never losing sight of the main guide—viz., to cut back the weaker ones much closer than those of full vigour. Few growers thin out the old wood so closely as they might do to advantage. Nor do they cut away the weaker wood from the centre of their plants sufficiently to let plenty of light and air reach all sides of the most valuable growths. One can scarcely prune weak growers too closely. We make a practice of cutting these back to one or two sound eyes from the part where the last season's wood broke.

I would describe the methods of pruning more fully were it not that this has so frequently been done in the Journal, and by abler pens. What I wished to do was to point out a few common errors, and merely give a few hints as reminders to those who have not had a life long experience with our national flower. All stocks that were budded last year can be cut back close to the Rosebud at any time now. I do not pretend to say why these are not inclined to break into new growth so early as the eyes upon our Rose plants, but it is certain that such is the case, although they come on very rapidly after the first start.—PRACTICE.

HOW TO MAKE HORTICULTURAL EXHIBITIONS A SUCCESS.

THERE is no doubt that the horticultural exhibitions, held in almost every town and village of any size, do a great amount of good to those in the fray; but to the general public, whence the gate money is expected, there is year after year that sameness which must eventually cause a loss of interest, with a result that in many cases the shows have either to curtail the number of classes and reduce the prize money, or be discontinued. Good money prizes will undoubtedly bring exhibitors, but to entice the public, something besides first-class fruits, flowers, vegetables, and plants are required.

We are unquestionably a practical, and at the same time an excitable people, delighted with sensational performances and competitions of almost any kind. This being so, a thought struck me that we might inaugurate along with our flower shows practical competitions in the several branches of gardening, that would incite greater public interest and bring "grist to the mill," which is an indispensable factor in the carrying on of exhibitions. At our Chrysanthemum shows prizes might be offered for the dressing of blooms, the making of bouquets, potting, tying and staking plants, table decorations, and even fruit tree pruning, and many other things, which would be of greater interest to the general public than the things staged on the tables. At our summer shows no doubt much could be done in this way, which would result in pecuniary gain, in addition to being of great educational value to the on-lookers.

This being perhaps a most opportune time to discuss the question of "how to make horticultural exhibitions a success," the above remarks may not be out of place, but I trust will draw from others suggestions that can take a practical form. Personally I have no appreciation for shows where the exhibitors form the committee and outsiders are boycotted, as such cliquism benefits neither the public nor horticulture. —S. HEATON.

ABELIA RUPESTRIS.

THIS is a handsome plant for a cool greenhouse, having small oval shining green leaves resembling the Myrtle, and clusters of white tubular or inflated flowers, which are produced in succession throughout the



FIG. 28.—ABELIA RUPESTRIS.

greater portion of the year. Even in a small state this plant is very useful, but when planted out and having attained a good size it is especially beautiful. The accompanying engraving (fig. 28) shows the character of the flowers and foliage, the spray being cut from a plant grown in a light well ventilated structure in which only sufficient heat is employed to prevent the temperature falling below 40° in winter. In warm southern localities the plant also succeeds well trained to a wall. If grown in pots a mixture of turfy loam with one-third leaf soil and a little sand will be suitable; but it will thrive in any good garden soil when planted out if the position be not too damp.

THE YOUNG GARDENERS' DOMAIN.

MUSHROOM CULTURE.

MUSHROOMS if well grown will prove very profitable, and no doubt a few notes on their culture will be found useful to readers of the Domain. There are several different methods of procedure, but this article refers to those grown in cold houses.

The material to use for making the bed should consist of fresh horse manure with plenty of straw in evidence, merely removing the very longest, adding one load of tan to every five loads of manure, which will cause it to retain its heat for a longer period. Some prefer removing as much of the straw as possible, but I am of opinion that if this is done there is not sufficient heat to make the spawn run well. Turn the material alternate days to sweeten it and dissipate rank steam, and if in any way dry apply water, but on no account drench it. To tell if it be either too wet or dry, take a handful and press it together, and if in proper condition it will hold together without any water coming from it.

When the material has been properly sweetened the bed should be made forthwith in the form of a ridge, it being 2 feet 9 inches in breadth at the base and the same in height, allowing 4 inches across the top, with no limit as regards length, making firm with a fork as the work proceeds. Place a thermometer in the bed to obtain the correct temperature, and when the heat is falling and gets to 75° spawning should be done without delay, using pieces the size of hens' eggs a foot apart all over the bed and an inch deep. When this part has been performed place an inch of soil over the bed, beating well with the back of a spade to make the surface smooth. Cover the bed with clean straw, more or less according to the weather.

From three to four weeks after spawning it can be plainly seen if the spawn has done its work, as if so, the bed will look as it were covered with white threads, and if it appears to be dry, give a watering, using warm, soft water. In another fortnight Mushrooms will be ready to gather, and in doing so pull all the stems out of the bed with them; do not, on any account, cut them and leave the stumps on the bed, for they will decay and cause those growing round it to decay also. Watering should be attended to when necessary, using judgment in the matter. A little salt mixed with the water will often be found beneficial. When the weather is bright, it is good practice to remove part of the straw, giving the bed a light watering with a very fine rose water-can, and cover again as soon as it is done.

Mice and woodlice are often troublesome to the Mushroom grower. The former can easily be got rid of with ordinary traps, while for the latter I have found it a good plan to place flower pots filled with sweet horse droppings on their sides close to the bed, examining every few days, when woodlice in great numbers will be found lodged amongst it, and may be readily destroyed.—P. R.

THE MELON.

THE Melon still holds its own on the dessert table, and well ripened highly flavoured fruits are always in demand. The method of culture and the structures in which the plants have to be grown will, to a large extent, determine the time of sowing. For the earliest crops grown in heated pits seeds can be sown singly in 3-inch pots the first or second week in February, using a compost of two parts fibrous loam and one part of decayed manure. After sowing, the pots ought to be plunged in a temperature of 75° or 80°, giving no water until germination has taken place. When the young plants have attained a height of 4 or 5 inches, fill the pots with soil, previously warmed, place a neat stake to each plant to prevent damage, and stand them on a shelf where they can receive as much light as possible. If the plants are to be trained to a trellis in a house no stopping will be required.

About a fortnight or three weeks prior to the plants being ready for their fruiting quarters, the compost should be prepared and the house made ready. Wash the glass and woodwork and limewash the walls, if this has not already been done, and the bed or mounds may then be put in. The compost in which they are to grow may consist of four parts of heavy loam, one part each of spent hotbed manure and lime rubbish, a few wood ashes, and a little soot. From the time the plants are finally put out they will require careful and constant attention, airing, watering, tying, and pinching the lateral growths whenever necessary.

The night temperature must not be allowed to fall below 65°, with a rise during the day of 10° by fire, or 20° by sun heat. In admitting air, the cultivator must be guided by external conditions; if these be favourable a little air may be admitted by the top sashes, when the thermometer stands at 80°, increasing the amount as the internal and external heat rises; but care should be taken to avoid all cold draughts, or injury will be done to the tender young plants. The house must be closed early in the afternoon, so as to obtain the full benefit of the sun heat, and if after closing the temperature rise by sun heat to 90° or 100° no harm will be done, provided there is ample atmospheric moisture. If the plants require water at the roots it should be given at closing time, when the house is damped down; and if the day be fine the plants may be well syringed to keep down aphids and other insect pests, taking care that the water is of the same temperature as the house.

Attention must be given to training. Until the plants have reached the trellis all laterals should be pinched off, but from that time the laterals may be allowed to grow until the fruits appear, when they should be stopped one leaf beyond, also pinching the sublaterals at one leaf. The stopping of the laterals will cause the flowers to open rapidly, and these will require fertilising. Some growers defer fertilisation until a sufficient number of flowers are open to form a crop, and then commence

the operation, with a view to giving the fruits an even start, and so being able to ripen them at one time. For the market grower this may be advantageous, but to the private gardener no advantage can accrue.

When the fruits are about three parts grown, they can be supported by strips of raffia, nets, or other material to prevent them from being broken off. As the fruits attain maturity and commence ripening, they will require an abundance of air, a little with advantage being left on all night; while less moisture both at the roots and in the air will be needed, though the roots should not be allowed to become too dry. If the fruits are to be kept any length of time or to be packed and sent away, they should be cut a day or two before they are fully ripe, as by so doing they will keep longer, travel better, and their flavour will be improved. There are many varieties, and each cultivator has his own particular favourites, but the following will be found very good—Hero of Lockinge, Royal Favourite, Eastnor Castle, Blenheim Orange, Invincible, and Sutton's Scarlet.—S. P.



HARDY FRUIT GARDEN.

Planting Fruit Trees.—During open dry weather in the course of the present month fruit trees of all kinds may be planted with the certainty that they will grow satisfactorily during the summer. Spring planting is not equal to autumn, but still some time is saved by planting now instead of delaying it until the following autumn if the ground is in good condition, and the trees or bushes are well grown and fibrous rooted.

The soil on which trees or bushes are planted should have been thoroughly well prepared in autumn by deep digging and adding suitable material for improving it. Ground prepared now ought not to have animal manure introduced, as this will cause rank and succulent growth, which is undesirable. Heavy soil must be thoroughly broken up, adding old mortar or road scrapings to improve it. Comparatively poor soil would be greatly benefited by the addition of fertile loam. Light soil may have marl or clay introduced if of an unusually sandy character, and must be well compressed before planting.

Trees and bushes for planting should have especial care taken of the roots from the time they are received from the nursery. It does not do to let them be out of the ground long uncovered. The drying of the roots will, more than anything else, cause unsatisfactory growth if any. Remove the packing material at once, and should the roots from unavoidable causes have become dried, plunge them in water for some hours, after which lay them in a trench and cover with soil to await the final planting. Where the trees or bushes have only to be lifted and replanted in permanent positions the lifting ought to be deferred until everything is ready for the planting.

Examine the roots before planting, cutting smoothly all bruised ends, and shorten long and strong roots. Preserve every healthy fibre, spreading the whole out carefully, and cover them, from the stem outwards, with fine soil. Make firm, and stake the trees at once, which will prevent wind moving. A mulch of short manure should be spread on the surface as a means of arresting evaporation from the soil.

Pruning Gooseberries.—Gooseberry bushes require annual thinning out of the growths previous to the buds commencing to push. Close spur pruning is not necessary with bushes, which ought to be grown in a free manner, and not have the bearing wood cut away. Some of the older branches and partially worn-out shoots may well be dispensed with. Thin out the rank wood in the centre of bushes, and shoots that are inconveniently near the ground cut entirely away. The aim of the pruner must be to judiciously thin out and leave shapely bushes. On walls and trellises permanent branches are trained at equal distances. Each year the side growths are shortened back to two or three buds, forming spurs. Dead or worn-out branches must be renewed by training in fresh growths from the base.

Pruning Currants.—Red and white Currants as bushes, or trained on walls and trellises, are pruned in closely—that is, the side growths are shortened to a few buds at the annual pruning. Bushes must not be crowded with too many principal branches, five to seven usually being enough for forming productive trees.

Black Currants should be grown in a less restricted manner. The pruning of these may be confined to cutting out the oldest wood and encouraging vigorous young wood, distributed evenly over the bushes. The best fruit is borne on well-ripened young shoots.

After pruning is completed Gooseberries and Currants may be freely dusted on a damp day with lime or soot, or both combined. This will have a cleansing effect on the bushes, and also serve to protect the buds against birds.

Strawberries.—If the cleansing of Strawberry beds was omitted in autumn it ought to be attended to now without further delay. Detach the runners from the principal crowns, and then hoe or fork up along with weeds. The ground between the plants should receive a liberal mulching of manure, which does not require to be dug in, but allowed to remain on the surface.

Beds cleansed and dressed in autumn may now have the loose material raked off, and be lightly pointed over with the fork, but not injuring the

roots. It is rather early yet to give the spring mulching. Recently planted beds require occasional hoeing between the plants. If any plants have become loosened make them firm again in the soil.

Ground may be prepared for new plantations, choosing a situation not previously occupied with Strawberries. Dig deeply, preferably double-digging the site, and add good decomposed manure in liberal quantity to light soil. Heavy soil is more benefited by thorough breaking up and deeply working than shallow cultivation, even if manure is freely employed. The preparation of the soil should precede planting by several weeks, in order that the freshly moved ground may have time to become consolidated, as Strawberries prefer firm ground in which to root. Plants from nursery beds formed in the autumn are the best for spring planting, which ought not to be delayed beyond the middle of March.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest House.*—Where the shoots reserved at the base of the present bearing wood are sufficiently advanced, they should be tied down, so as to give them the desired inclination, taking care not to bring them too sharply to the branches, nor endeavour to tie them until they are sufficiently advanced to allow of the operation being performed without snapping off their points. The terminal growths of leading branches should be trained in their full length, pinching the laterals to one leaf as produced. Growth for furnishing branches also require to be trained in without stopping, tying and regulating them as they advance, in doing which leave plenty of room for swelling. In laying-in young growths from extension branches, allow a distance of 12 to 15 inches between them, and about 6 inches between the shoots, so that the foliage will receive plenty of light and air. Shoots retained to attract the sap to the fruit must be kept closely pinched to one leaf after they have previously been stopped at the third joint or to that with a good leaf.

Make an examination of the border every fortnight or three weeks, not being deceived by the surface looking wet from syringing, and supply water or liquid manure to weakly trees thoroughly, whenever required. This procedure is better than having stated times for watering, for needless supplies of either water or liquid manure only tend to make the soil sodden and sour, while neglect of affording moisture retards growth and favours attacks of red spider. Syringe the trees in the morning and afternoon to keep this pest in subjection, and for it and aphides apply an insecticide, petroleum emulsion properly diluted being effective and safe. The temperature should be maintained at 60° to 65° by artificial means, a fall to 55° on cold mornings being much better for the trees than sharp firing, which only induces attenuated growths and favours insects.

Trees Started at the New Year.—These will now require attention in disbudding, doing it gradually, removing the strongest and ill-placed, retaining a good growth at the base of each current bearing branch, and a shoot on a level with or above the fruit. Thinning the fruits must also be attended to where too thick by first removing the smaller and those on the under side of the branches, but avoid wholesale thinning and disbudding, proceeding on the principle of a little and often. A temperature of 55° at night in cold weather, 60° when mild, 60° to 65° by day artificially, advancing to 70° to 75° from sun heat, and free ventilation from 65°. Syringing the trees must be practised morning and afternoon, except when the weather is dull, when an occasional syringing and damping of the paths and borders in the morning and early afternoon will be sufficient.

Houses Started at the Beginning of February.—The trees are coming into blossom, and must not be syringed after the anthers show clear of the corolla, but sprinkle the floor and border every morning and afternoon when bright, occasionally only when dull. Avoid cold currents of air, yet ventilate early and freely on all favourable occasions. Maintain a temperature of 50° at night, 55° by day, advancing to 65° or more from sun heat, but not without full ventilation. Leave a little ventilation constantly at the top of the house, and enlarge the opening on dull days so as to insure a change of air, keeping the atmosphere buoyant, for a stagnant condition of the air of the house is fatal to a good set of fruit. Attend to fertilisation when the blossoms are fully expanded and the pollen is ripe by shaking the trees, or dusting with a rabbit's tail mounted on a small stick, or a camel's-hair brush.

Trees to Afford Fruit in July or Early August.—The house for this purpose should be started early in March, there not being any need to close the house; but give air fully day and night, except when frost prevails, to prevent the trees being brought on too rapidly. Nothing, however, is gained by striving to retard the trees at the blossoming stage, but everything may be lost as regards a crop by failing to attend to the conditions essential to a good set of fruit. These are ceasing syringing after the anthers appear, and only a moderate air moisture for the proper development of the blossoms—a temperature of 50° by day, advancing to 65° with abundant ventilation, and 40° to 45° at night with enough air to prevent the atmosphere becoming stagnant. If there be a plentiful show of blossom remove those on the under side of the trellis or the back by drawing the hand the reverse way of the growth.

Late Houses.—The buds in these are much too forward where the roof-lights are fixed, there being quite a fortnight's difference between them and those which have been exposed since the fall of the leaf. All pruning and readjustment of the trees on the trellises must be completed without delay. Where the lights are off they need not be replaced until the buds show colour. In other cases ventilate freely, merely excluding frost, or not that, as the buds take no harm until they are swelled so as to show pink or red. The pruning must be completed in the case of trees in unheated houses before the buds are much advanced and swelling, and they cannot be kept too cool, as late blossoming is an important matter,

the spring frosts and dull weather at the time of setting often proving disastrous to the crop. Indeed, unheated houses are not advisable, especially in cold localities. Fixed roof-lights are a still greater mistake, as the blossoms come on too rapidly in seasons like this, and they often have to struggle with a close, moist, cold atmosphere when they should be setting. A little heat during flowering does much towards insuring a good set, and in late summer a gentle artificial warmth does much in ripening the fruit and maturing the wood. Examine the borders, making sure that there is no lack of moisture. If the soil has left the walls loosen it with a fork, and close the interstices so as to make the water go through all parts of the borders, and thoroughly moisten them from the surface down to the drainage.

THE BEE-KEEPER.

THE WEATHER.

BEE-KEEPERS are usually close observers of the weather; it is, therefore, interesting to compare notes with those who may be more favourably situated in other parts of the country. In this district (South Yorkshire) the changes that have taken place in the weather during the first month of the year have been many. The early days of January were exceptionally mild, the bees being almost daily on the wing. Afterwards high winds prevailed, causing disaster to the bees owing to the roofs or hives being blown bodily over. Rain and sleet followed, then a spell of fine weather and a high temperature. Frost afterwards set in, 12° being registered two nights in succession, and again a rapid change to rain. Similar weather has prevailed up to the present time—fine mild days, rain, frost, and snow. It having been snowing for several hours the whole surface of the ground is at the moment of writing covered with a white mantle. This will probably disappear as rapidly as it came, as the sun is now gaining power daily.

What will be the condition of the bees after the various changes in the weather? Will they have commenced breeding at this early date? After a wide experience of bees wintered in a variety of hives, we do not think they suffer nearly so much as some bee-keepers imagine if they are in dry and well ventilated hives. Strong colonies in favourable situations will doubtless have commenced breeding if the stock is headed by a young queen. It is, however, of little advantage to the bee-keeper to have brood thus early in the season, as a cold spell of weather may set in at any time, and it may then become chilled.

Bees if not handled or disturbed during the winter months, and are well supplied with stores, rarely make a mistake in this respect, as the brood nest will not be enlarged until natural pollen can be obtained outside the hive. Should the apiary be situated in a district where early spring flowers are scarce, artificial pollen must be supplied to them; but in any case the bees may be depended on not to raise more brood during the early spring months than they have food for.

HIVES.

Whilst on the subject of early breeding, it may be an advantage to know which is the best hive for wintering purposes. We should have no hesitation in saying there is nothing equal to the straw skep for this purpose, and in a large apiary we would recommend bee-keepers to always have a few skeps for early swarms. We have practised this system for many years with varying results. The stocks in straw skeps are not always the strongest in early spring. But taking one with the other they invariably winter well. The colony in a warm frame hive, if well attended to, will be much stronger by the time the honey flow comes than one in a straw skep if it does not swarm. If it does, then allowance must be made for the old stock, swarm and cast as the case may be.

A hive with double sides, or one having an open-air space which may be filled with cork dust, may be depended on to winter bees successfully. We have on several occasions experimented with a given number of hives, some of which had an inch or more of open space round the hive. In the others this space was filled with some warm material as mentioned above. There was not sufficient difference, however, the following spring to enable it to be said that one was better than the other.

Again, some bee-keepers will have the majority of their hives made with single sides without any packing or open-air space. Hives of this description are soon affected by the various changes in the weather. They, no doubt, are soon warmed by the sun striking directly on them; the extreme cold, however, will affect them in the opposite direction. They are very hot in the summer; but this may be counteracted by shading them during the prevalence of bright sunshine. We have some extra strong colonies in hives of this description at the present time, and it is somewhat difficult to say which are the best.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Anti-Blight Powder (C. D., Kent).—This preparation may be procured from Messrs. Barr & Sons, 12 and 13, King Street, Covent Garden, London, W.C.

Lettuce Culture (G. W.).—The practical article by "E. D. S.," on page 121, will probably convey all the assistance you require. If such is not the case let us know what further details you require.

Stapelia patula (G. Lingard).—We can best answer your question relative to *Stapelia patula* by reproducing an article and an illustration which appeared in our columns some years back. This you will find on page 123, and if we can further assist in respect of this or any other plant we shall be glad to do so.

Ring of Eggs from Apple Twig (Sussex).—The eggs from an Apple twig are those of the lackey moth, *Bombyx neustria*, which appears rather a common occurrence this season, especially in the South of England. For preventive and remedial measures we refer you to last week's *Journal of Horticulture*, "Eggs on Apple Twig (Medway)," page 116.

Protecting Buds against Bullfinches (W. T. F.).—The proportions of the lime and soot mixture are—equal parts by measure of quicklime, freshly burned light lumps, and recently swept soot. Slake the lime, and when fallen to a fine powder place in the soot, mix well, and then add water so as to form a thin wash that can be readily applied with a syringe. To prevent this clogging, the mixture should be passed through a hair sieve. Except for the glaring whiteness lime alone acts just as well or better. We simply procure the freshly burned lime, slake in water, forming at once into a whitewash, and apply with a rose syringe when the bushes are dry. It adheres to them, and the birds leave the buds alone. Old lime washes off, birds care nothing for it, and it has little effect on lichen and moss. We have not kept any account of the quantity of water necessary, but have used the lime, also the mixture of both soot and quicklime, for half a century with great advantage in protecting the buds against bullfinches and sparrows. Some slake the lime, then form into a limewash consistency with boiling water in which 3 ozs. of soft soap to the gallon has been dissolved, and apply at a temperature of 130°, or as hot as the finger can be borne in it. The "hot" mixture acts better on insects—the only advantage.

Birdlime (Idem).—Half the stuff made spoils the feathers of the birds. One of the simplest preparations is resin and sweet oil melted together to the required consistency, about two parts resin and one part oil. "Myocum," a substance obtainable from some nurserymen (Dickson's) answers well, and so does the "birdlime" to be had from birdcatchers, and some so-called "naturalists." The best is made from either Holly bark (the middle bark) or Mistletoe berries. The Holly should be gathered in June or July, and boiled for six or eight hours till it becomes tender; then drain off the water, and place the material in a pit under ground in layers with fern (bracken), and surround it with stones. Leave it to ferment for two or three weeks, until it forms a sort of mucilage, which must be pounded in a mortar into a mass, and well rubbed between the hands in running water; all the refuse must be worked out, then place the mucilage in an earthen vessel and leave it for four or five days to ferment and purify itself. The Mistletoe berries must undergo a similar process. It will stick to the fingers or hands of those preparing it, and may be removed by means of spirits of turpentine.

Moss on Tennis Lawn (L. S. H.).—For the destruction of the moss use one peck of unslaked lime and one peck of dry wood ashes, and distribute the mixture evenly over the surface after this has been scratched well with an iron rake, removing the moss disturbed thereby. It may be done from now to March in mild weather, the earlier the better. If a better growth of grass is desired apply a dressing of decayed manure or compost a short time after using the lime and wood ashes, or soot during moist weather when the grass begins to grow. A peck per rod is a sufficient dressing.

Asparagus for Market (A. H. E.).—The most popular and best variety of Asparagus for market work is a selection of the Giant as offered by leading seedsmen. We have had excellent results from the True Giant, it being more productive than Connover's Colossal, though this attains an enormous size. Well grown heads of the True Giant measure from 2 to 3 inches in circumference, and these splendid heads command the readiest sale and most money, as you have been rightly told. Size, however, very much depends upon cultivation, but, of course, the better the variety the more satisfactory the result.

Pruning Black Currants (Lampeter).—These bear to some extent on spurs, but not nearly so freely as Red and White Currants, therefore the bushes on walls should be pruned and trained on the young wood and spur principle combined, as in the case of the Morello Cherry, laying in some young wood annually, and cutting out a portion of the old. We should now shorten some of the young growths to a few buds of their base, and leave some of them full length for bearing. The short stubby shoots or natural spurs will give fruit, and must not be shortened, though they may be cut away when they become too long, always in favour of younger growths nearer the wall. If closely spur-pruned like Red Currants the Black produce very little fruit.

Cyclamen Bulb and Maggots (T. T. R.).—The corm has had its roots almost entirely devoured by the maggots, which accounts for the flowers not developing properly. The "maggots" are the grubs or larvæ of the grooved or black Vine weevil, *Otiorhynchus sulcatus*. They are extremely voracious and very fond of the corms of Cyclamen, often eating away the lower or under side as well as the roots. The weevils are also destructive, eating the tender fronds of Adiantums and other Ferns, and leaves of Peaches, Nectarines, and Vines. There are few worse pests, and not many harder to kill in the larval state. We have tried many specifics, and find the simplest is to water the plants with water as hot as the hand can bear for about half a minute. The worst of the mischief is that of their not being detectable until they have greatly injured or ruined the plants; we therefore make a practice of watering the plants occasionally with a weak solution of Little's soluble phenyle, 1 fluid oz. to 3 gallons of water, as a preventive, commencing towards the end of summer.

Fever Fly on Black-seeded Brown Cos Lettuce Roots (H. A.).—As you have not forwarded specimens, we can only accept your description, for the disease is certainly new to us on this plant, though we have found the "fever fly," *Dilophus vulgaris*, on the roots of cereals and grasses, and occasionally other plants. The grubs are only about a quarter of an inch in length, cylindrical, legless, dirty white, with a brownish head or "snout." They live in the roots or underground stems, and work upwards and inwards, several being found at one stem. The pupæ are chestnut coloured, and the fly two-winged. As regards prevention, a mild dressing of fresh gas lime, 1 stone per rod, mixed with an equal quantity of air-slaked lime, has been found useful. Its use on bare ground would not affect the crop taken shortly afterwards, only leave on the ground for a few days before turning under. We have also found great benefit from kainit applied in February, especially on light land, 1 ton per acre, 1 stone per rod, this heavy dressing not doing any harm left on the surface for a month or six weeks before stirring the ground or cropping. Good results on another plant resulted from the use of a mixture of bone superphosphate and kainit in equal parts, 7 lbs. per rod, applied to the surface and turned under as soon as convenient, afterwards using 1½ lb. per rod of finely crushed nitrate of soda, this being applied as soon as the seedlings were thinned. We do not think nitrate of soda alone desirable, though it certainly stupefies the grubs and they die, while the crops thrive in consequence.

Liming Vine and Peach Borders (N. D. P.).—The lime (slaked in a box by air about twelve months) may be used on the Vine border of the house to be started next week, as the lime will be quite mild, having parted with most of its causticity and passed into the carbonate condition. It then dissolves slowly and constantly in the soil, and acts on the organic matter and in turn on the other mineral constituents of the soil, besides supplying the all-important lime directly or indirectly to the Vines. As you say the soil has not a particle of lime in it, but plenty of iron, it would be advisable to use a little gypsum along with the short manure used for mulching—say, 4 ozs. per square yard, sprinkling on the surface. This will correct any tendency to sourness, and also act on the iron. We should use equal parts of air-slaked lime and soot by measure, and apply half a pound of the mixture per square yard, pointing in lightly, or that quantity of lime may be used. It can, of course, be left on the surface and be worked in by the waterings; but avoid making the border too wet by needless applications. The treatment in other respects appears excellent, the results justifying the procedure. 2, Lime is an excellent dressing for a Peach border, and the air-slaked form much the better, as, nearly reverted to the carbonate state, it will not act so energetically on organic matter, and yet yield lime slowly in solution—that is, it will be dissolved out by the soil waters and pass away by the drainage, except so much of it as the nitrifying micro-organisms have made available for taking up by the roots of the Vines or Peaches as nitrate of lime.

Old Currant Bushes (Amateur).—Those with thick main branches, spurless at the base and upwards to a great extent, ought not to be tolerated for long without some attempt being made to renew their vigour by originating new shoots, cutting the old ones away. This can easily be done by selecting a strong growth, either from the base of such above or below the ground line, or a prominent sucker springing up in a suitable position. Very old and fungus-stricken bushes should be discarded, grubbing up and burning them, then the ground must be deeply dug, sweetened, and enriched before planting young vigorous trees.

Peaches to Ripen in July (R. Lawrence).—The trees to afford fruit in July must be started at once, they having commenced to swell their buds naturally. Syringe the trees occasionally until the blossom buds show colour, when it should be discontinued, but sprinkle available surfaces once or twice a day to maintain a genial condition of the atmosphere, avoiding a close stagnant one. If the flowers are very numerous thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder, enabling them to set better. Maintain a temperature of 40° to 45° at night, and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat with free ventilation. On cold nights the temperature may fall to 45°, or even less, also 50° by day, allowing a little ventilation constantly at the top of the house.

Pruning Apricots (V. S. P.).—Extreme measures in pruning are ill-adapted to the Apricot, the most successful results following when pruning can be reduced to a minimum. Apricots bear freely on well-ripened shoots of the previous year, also on spurs formed by shortening shoots not wanted for extension or furnishing young bearing wood. In addition to these, spurs are naturally formed, and wherever such are suitably placed they should be retained in preference to artificial spurs. The overcrowding of spurs should be avoided, and undue elongation of spur clusters prevented by judiciously shortening projecting portions either at the winter pruning or when the trees are examined after the fruit is gathered. The annual shoots reserved for bearing ought to have the immature points removed down to firm wood, being usually when thus shortened about a foot or 15 inches in length. Weak shoots cut in closer. Those reserved with the intention of originating new growth must also be pruned to a strong wood bud.

Apple Royal Jubilee (D. E. H.).—This variety bears a close resemblance to Golden Noble, the fruit being medium sized to large, usually very even, conical (instead of round, as in Golden Noble), skin smooth, clear bright lemon, without any flush of red, but a few small reddish spots and small patches of russet; eye small, rather closed; stalk short; flesh yellowish, firm, solid, with a pleasant acid juice, and baking of a clear amber colour, perfectly melting, and with a rich acidity. A very handsome and heavy culinary Apple, in use from October to March, but most valuable at midwinter, as conical fruit is preferred in the markets, especially golden, about Christmas. The tree has a compact but free habit, very stout and firm, is late in flowering, foliage large and shining, and the wood being stout and robust the fruit is not liable to fall in windy weather. It is a free bearer and healthy—a fine sort to graft on old stems. This Apple was raised by Mr. Graham about twenty-eight years ago, and has been grown to some extent in Kent, experienced growers regarding it as a great advance on the softer autumnal Apples, as it travels well, and can be kept until March. It does well in any good loamy soil, and though a Kentish fruit would no doubt succeed in favourable localities in the north—at least, it gives promise of sterling value further north than your location.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (H. C.).—Your Apple is the Broad-eyed Pippin. It is a very old English variety, and was mentioned by John Ray, a celebrated botanist and writer, who was born in 1629 and died about 1704.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably

injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (S. Junior).—Begonia insignis, slightly out of character. (W. J.).—Crotons, are florists' flowers that can only be named by comparison in a large collection. The Ferns and Selaginellas were quite dead through packing in cotton wool. Orchid shrivelled, probably Lycaste Skinneri. (A. H. E.).—Apparently a small leaf of Calathea (Maranta) tubispatha.

COVENT GARDEN MARKET.—FEB. 15TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Cobs ...	30 0	40 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb. ...	1 2	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lilac, bunch ...	3 0	to 4 0
Asparagus, Fern, bunch ...	2 0	2 6	Lily of the Valley, 12 sprays	0 6	1 0
Azalea, white, doz. bnchs. ...	3 0	4 0	Marguerites, doz. bnchs. ...	4 0	5 0
Bouvardias, bunch ...	0 4	0 6	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Carnations, 12 blooms ...	1 6	3 0	Narcissus, doz. bnchs. ...	1 0	2 0
Chrysanthemums, per bch. ...	1 6	2 0	Orchids, var., doz. blooms	1 6	9 0
" specimen blooms, per doz. ...	1 6	to 2 0	Pelargoniums, doz. bnchs. ...	6 0	10 0
Daffodils, single yellow, bch. 12 blooms ...	0 9	1 0	Poinsettias, doz. blooms ...	0 0	6 0
Daffodils, double, bunches ...	0 6	0 9	Roses (indoor), doz. ...	2 0	3 0
Eucharis, doz. ...	2 0	3 0	" Red, doz. ...	6 0	8 0
Freesia, doz. bnchs. ...	2 0	4 0	" Tea, white, doz. ...	2 0	4 0
Gardenias, doz. ...	9 0	12 0	" Yellow, doz. (Perles) ...	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	6 0	8 0	" Safrano, doz. ...	1 0	1 6
Hyacinths, Roman, bunch ...	0 6	0 8	" Pink, doz. ...	0 0	0 0
Lilium lancifolium, white ...	0 0	0 0	Smilax, bunch ...	2 0	3 0
" longiflorum, 12 blooms ...	4 0	6 0	Tulips, bunch ...	0 4	1 0
			Violets doz. bunches ...	0 6	1 6
			" Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each ...	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	9 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz. ...	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
" small, 100 ...	4 0	8 0			



SHEEP FOR MUTTON.

WE are well acquainted with wholesale butchers in a large way of business, men who know what is what and have either made fortunes out of their business, or we are very much mistaken. We meet with them, not every day but occasionally, and have been very much struck with the constant tenor of their remarks on the mutton trade. They have one text, "Farmers must cater for the public."

Now when these men speak of the public they do not mean the Bradford woolmerchants but the toiling millions who eat the joints of mutton. Wool is not what it used to be, an uncertain quantity,

but is now a certain quantity of very low value, and that value seldom rises; if it does so for a short period, invariably falling lower than before. The fact is that the English farmer cannot compete with his colonial brother in the production of wool alone, and to the English sheep breeder of the future wool must be more of a bye than a staple product.

Notwithstanding freezing chambers and all the newest appliances, the carriage of mutton from the Antipodes must still be an expensive process and give the Englishman a good advantage in supplying the home market with fresh meat, but the carriage on bales of compressed wool is quite another thing, and amounts to nothing on the gross value of the commodity.

Well! If the British farmer is to turn his attention to mutton and leave wool to take its chance, what do our friends the butchers say on the subject? What they want, and therefore what their customers want, is a blackfooted sheep of about 70 lbs. dead weight.

We have been much interested in an article (by a lady) in the "Nineteenth Century" for December, on "Neglecting our Customers." It was illustrative of the way in which foreign markets are lost to the producers of English goods. The facts put forward were very startling, but will it not be the same at home if the home producer does not set his house in order and prepare to hold his ground? In fact, everywhere we see goods marked, "made in Germany," "made in Bavaria," made in every nook and corner of the earth, filling English markets, and this free trade practically means the best of everything at moderate prices.

Therefore, as the British consumer is determined to have one class of mutton put on his table, if the home farmer does not supply him with what he wants, the foreigner will.

As long-wooled sheep, with their white legs and over-fat heavy carcasses, are not suited to the English market, wool must be sacrificed; and short-wooled down or mountain sheep, or better still cross-bred sheep, must take their place.

And here we find perhaps the key to success in breeding sheep for mutton purposes. As long as pure breeds only are used, almost any cross will be successful. It is strange but true, that a first cross between two old-established and pure yet distinct breeds of sheep produces an animal which for vigour of constitution, and therefore mutton-producing power, is superior to either of the two parent stocks. Constitutional vigour, the result of the infusion of new blood, displays itself in increase of bone and lean flesh; the very points which the butcher is now seeking, in order to satisfy his customers. We are told, and we believe it to be true, that this spring will have seen the birth of more cross-bred lambs than has ever been known in this country. This shows that, notwithstanding high prices for pure breeds, the farmer at large is taking advantage of his opportunity, and is making use of these breeds, lying so ready to his hand—very much, we hope, to his future advantage.

No one with a knowledge of and interest in the meat trade can have failed to notice the increasing quantity of lamb offered in the butchers' shops during the spring and summer, and how from July onwards the young animal gradually takes the first place in the supply of mutton.

This is the result of the demand for small and succulent joints, successfully met by the enterprise of farmers in forcing their sheep to early maturity. We do not much believe in autumn-born lambs; they are generally delicate, and it is rather difficult to get them fat quickly enough to make good lamb—i.e., good enough to satisfy the epicure who is willing to pay a high price for it.

Christmas or a week or two later is quite early enough to commence the lambing season, for the lengthening days and increasing hours of sunshine have much to do with encouraging the milking power of the dam and the growth and well-being of her offspring.

Ewes which lamb down early require liberal feeding during the period of gestation, so that they may be in a condition after lambing to give full scope to their milking powers. Of course there is a greater lambing risk to an ewe in good condition than to one comparatively poor; but, in farming as in commerce, to earn profit risk must be run.

It is necessary, therefore, in the first place to have the ewe in good condition, for if she be young it will not have been a difficult matter, and if she be comparatively old and intended for drafting off in the summer the extra food will be recovered in the sale of the ewe if it is not in the lamb. But it will be, for it is in the older ewes that good treatment so well repays the cost.

In the first place, when trying for early lambs it is always the old ewes who lamb down first; in fact, it is very difficult to get early lambs from shearlings. Another thing! The shearling keeps up her milk supply much longer—i.e., does not dry off so soon—but the old ewe gives much the larger supply when the lamb most wants it (if he is to be made lamb of). When the lamb has gone to the butcher at 45s. to 50s. it does not matter how soon she dries up, and makes ready to follow to the same bourne from which no sheep returns.

WORK ON THE HOME FARM.

We have had two days' sharp frost and easy manure leading, followed by drizzling rain and April-like showers. Everything is very wet, and the muck-cart, though still at work, is making a bad mess of the roads and of the land so far as it has to go.

Rolling Wheat cannot be entertained, and the cross-cutting of fallows, though obviously the next item in the farm-work catalogue, will have to be deferred until the weather is drier. It is no use turning over the land ready for working if we are puddling it with the horses' feet at the same time.

The Turnip land is ploughed close up; then what can we do but lead muck and let the District Council take care of the roads? Fortunately the land has to pay but half the cost.

We rejoiced in the short and fleeting frost as likely to create a nice mould for the Oats. Alas! the rain is sadly spoiling our hopes, and we must not attempt any preparation for sowing until the weather takes up, as one day's heavy rain can undo all the previous day's labour. Herein lies one of the chief advantages of a large farm and a good force of horses, in that a day's drilling, say 12 acres, can be prepared, drilled, harrowed, and, weather permitting, rolled down in one day, and as it were, at one operation. If rain comes on during the day but a small portion of the labour is wasted, the several implements following each other closely.

We hear of a few early lambs, but have not seen any as yet. Ewes require well feeding now until they lamb down. Swedes are not a suitable food just before lambing; we find Mangold given on grass the most healthy food. There is little difficulty in lambing, and the ewes milk well.

It is a good thing for ewes to have a walk of half a mile or so to and from the lambing pen, the exercise does them a world of good. We have known a flock taken from the fold to a field of Turnips more than a mile away, and though two or three might be wisely left at home by the shepherd in the morning, the general health of the flock benefited greatly by the exercise.

We see that the Queen's speech promises great things to Irish farmers; we hope that they may find some more substantial fulfilment of the goodwill than English farmers have.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

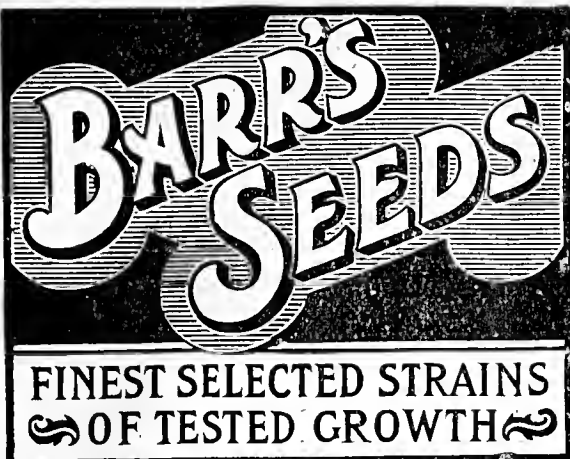
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899. February.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
		inches	deg.	deg.	S.	deg.	deg.	deg.	deg.	inches.	
Sunday	5	29.485	35.3	35.3	S.	36.2	38.9	28.6	42.5	25.8	0.016
Monday	6	29.784	38.4	37.3	S. E.	36.2	46.1	34.3	46.9	29.9	0.318
Tuesday	7	29.508	46.1	45.9	S.	37.1	54.8	35.3	75.6	31.7	0.141
Wednesday ..	8	29.504	50.0	48.4	S.	40.0	54.1	46.1	55.2	40.1	0.258
Thursday ..	9	29.535	48.9	47.1	S.	42.1	58.1	47.7	61.1	41.7	0.193
Friday	10	29.520	57.7	50.2	S. W.	43.4	64.8	48.9	95.6	45.1	—
Saturday....	11	29.614	50.8	47.6	S.	44.4	54.1	49.9	68.0	43.6	0.078
		29.564	46.7	44.5		39.9	53.0	41.5	63.6	36.8	1.004

REMARKS.

- 5th.—Rain from 4 A.M. to 10 A.M., dull and overcast after.
 6th.—Overcast morning; heavy rain and sleet from 3 P.M. to 7.30 P.M., and drizzly after.
 7th.—Dull and drizzly till 10 A.M.; bright sun from 11 to noon, and occasionally after; thunder and spots of rain at 3.35 P.M.
 8th.—Heavy rain between 2 and 4 A.M., then overcast till 11, and the remainder very wet.
 9th.—Shower at 4.30 A.M.; overcast morning; heavy rain from noon to 3.30 P.M.; fair night.
 10th.—A lovely spring day; the warmest in February for more than forty years.
 11th.—Fine, and sunny at times in morning and afternoon; but rain from 0.30 to 2 P.M.

A very warm and wet week.—G. J. SYMONS.



A FEW SPECIALITIES.

- Barr's Monstrous Long Pod Broad Bean.**—The earliest, best flavoured, largest podded, and most productive. Per quart, 2/6.
- Barr's Green Haricot Dwarf French Bean.**—Of very delicate flavour, and unsurpassed as a Haricot Bean in Winter. Per quart, 2/6.
- Barr's Best of All Autumn-cutting Cabbage.**—Dwarf and compact, very early and of exceptionally fine cooking quality. Per packet, 6d.; per oz., 1/6.
- Barr's Earliest French Short Horn Carrot.**—A favourite for soups, and extremely early; the best variety to sow in frames. Per packet, 4d.; per oz., 10d.
- Barr's "Pride of the Market" Cucumber.**—A specially fine dark-green variety of handsome shape; a favourite in Covent Garden Market. Per packet, 1/6.
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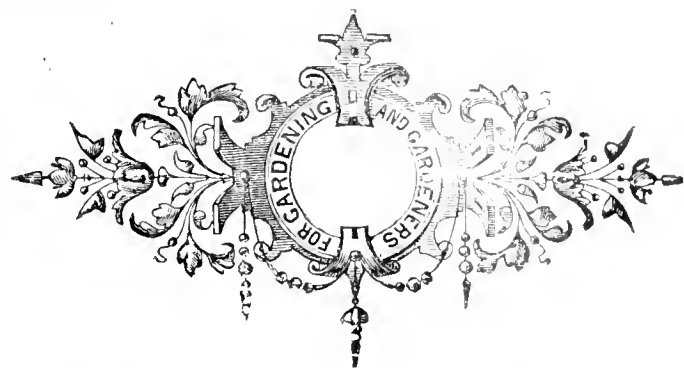
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Journal of Horticulture.

THURSDAY, FEBRUARY 23, 1899.

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SCIENTIFIC KNOWLEDGE.

A Primrose by a river's brim,
A yellow Primrose was to him,
And it was nothing more.

"AN ounce of practice is worth a pound of theory." How often these words have been thrown out as an unrefutable argument in favour of rule of thumb or empirical knowledge alone! It must be admitted they are difficult to answer, because the statement is true up to a certain point. What is meant is that practice alone is better than theory alone, and this no one will deny in matters horticultural. Can we, however, go so far as to say that theoretical knowledge is absolutely useless?

Those who object to scientific teaching as worthless or are carried away by their prejudices against such instruction—even in some cases considering it absolutely mischievous—either do not know, or have not considered seriously, what is meant by it. With the best of intentions they speak disparagingly of this kind of teaching, regardless of the fact that (to quote Smiles) "though many of these facts and observations seemed, in the first instance, to have but slight significance, they are all found to have their eventual uses, and to fit into their proper places." We all admire the "practical" man, but if we consider seriously we must acknowledge that he is brimming over with theoretical knowledge—in many cases obtained through great tribulation—much of which could have been obtained by the study of reliable books.

We are aware there is a great improvement in recent years, but with the development of glass culture which has made such immense strides during the last decade, there are hundreds of workmen engaged in horticultural pursuits who have no acquaintance with the facts in science connected with their occupation. They are mere machines, hewers of wood and drawers of water.

Then, again, there are the small nurserymen. Many of these are striving their utmost to make

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both ends meet, and yet owing to the lack of technical knowledge they expend on manures far larger amounts than they would if they knew the requirements of their plants, and how to proceed in supplying them; or should a fungoid or other disease appear they are perfectly helpless, and have to solicit advice from the nearest scientific neighbour.

The rule-of-thumb man sails comfortably in smooth water, but he is "all at sea" when the storms of disease and difficulty assail him. A workman who is educated and possessed of the necessary grit, is in every way more useful to his employer, and is himself a more intelligent, and therefore a happier and a better man. He will, as a rule, be distinguished by superior moral habits in every respect, sober and discreet, and indulge in amusements of a rational kind. The ignorant workman drops his tools and thinks no more of his work until the next morning; the intellectual man in his spare moment devises and schemes plans, which improve his own work and benefit his employer.

There are few branches of scientific knowledge that will not throw a strong light on all we do in the garden, in the nursery, or on the farm. "Science" is what we know to be true, what Professor Huxley, I believed, called "organised common sense." It can be proved, for instance, that ten elementary substances are essential for the growth of a plant. Deprive it of one of them and it languishes and dies. Would it not be advisable for all who cultivate plants, either for pleasure or profit, to become acquainted with these elements, and to know whence they are derived? This would be learning what is termed "science," and the particular branch known as "chemistry." How many there are who yet view all the different objects of Nature with comparatively blank mind as to their construction and components, yet every hedge and ditch, every seedling and plant, every flower and herb, every pond and brook, becomes a centre of attraction, a new world to us, when science reveals to us Nature's charms.

Let us begin with some simple work on botany. The poet Wordsworth tells us that to one of his characters a Primrose was a Primrose—and it was nothing more. Yes; and we may venture to say it is nothing more to scores of our young men of the present day. Would it not be well to study the wonderful device the Primrose has for insuring cross-fertilisation, or the marvellous arrangement for the preservation of the nectar from all insects which would rob the plant without in return doing it a service?

Again, light and heat are two of the phenomena of Nature intimately connected with plant growth. An easy work on these subjects would enable many a man, if he had thoroughly assimilated the contents, to ward off accidents that happen through defective ventilation or too great an exposure to the sun's rays.

Geology takes us back into remote ages, revealing to us the flora and fauna of a world otherwise unknown to us. It acquaints us with the history of the soil—that immense storehouse of plant food and chemical laboratory in which some of the most wonderful changes in Nature take place. It teaches us that the work of Creation is still going on—that new continents, and new varieties of rocks, and soils, and plants, and animals are continually being evolved. It explains why we find sandy soils in one district, clay in another, and chalk in another.

Biology introduces us to the life which is invisible without the assistance of the microscope. It reveals to us the mysteries of the vegetable cell, the eelworm and the Potato disease, the mildew and the damping-off fungus. Every gramme of soil and every drop of impure water teems with life, much of which is of great importance to the cultivator of plants. We hope that enough has been said to induce more of our young gardeners and nurserymen to make a start in acquiring scientific knowledge. We cannot be certain that it will enhance their position, though this is more than probable, but we may be sure it will increase their own happiness to no small extent.—F. S. H.

HARDY FLOWERS IN FEBRUARY.

FICKLE has been the weather since the dawning of the year. The fate of the outdoor flowers has been a hard one. Under glass their kindred have enjoyed the heat and shelter while they have borne the cold, the snow, and the rain. They have had all three. The frost in the North has been keen, and they have withstood it without a protecting covering of snow for days. At length Nature's shielding mantle was laid over them, and then came rain and swept it away. As this is being written there is every appearance of the frost having gone for the time, but at this season it is unsafe to attach much value to weather signs.

We cannot expect many flowers in the garden now. There are fewer than we often have at this season. "Rain, rain," was the burden of the dying year; "rain" again that of the new, followed by intense frost. Surely nothing could come into bloom and remain with such a time. Yet there are a few flowers, and these we may wander out to see. Even the Snowdrops are, as a rule, late. Our Fair Maids of February may have opened in time for their anniversary day, February 2nd, old style, but they have not anticipated it, though some of those allied to *Galanthus nivalis* have come before. But now they are around us. With pure blossoms they swing in the breeze. Of various sizes and with slightly different form they delight us with their grace and their sweet beauty. "Fair-handed Spring" has many brighter, but no fairer flowers than these blossoms sent, as the legend says, to comfort Eve when driven from Paradise.

Linked with the Snowdrop, in Thomson's poem of "The Seasons," is the Crocus; it is associated with it in our gardens too. Not yet do the clumps of the great Dutch Crocuses enamel the ground with their vivid colours, but there are some of the race to forewarn us of their coming—some whose beauty, if less brilliant, is no less pleasing. Delightful are those clumps of *Crocus Imperati*, whose fawn and black spirelets unfold in the sun into flat saucers of bright purple. If less brilliant, pretty are these little flowers of *Crocus Sieberi*, which, as if to compensate for its lesser brilliancy when open, is bright purple-blue when closed, opening almost the same hue when the sun lights upon it. The little *Crocus ancyrensis* has not quite disappeared for the year, but it has been eclipsed by the larger blooms of *C. aureus*, which in the border and rock garden glows even in the rain, as if the sun were shining with its utmost fervour.

In the rock garden bushes of *Erica carnea* are ruddy with their waxen blossoms, which, though they have not assumed their perfect colouring, are yet admired of all. Beautiful as is the white variety *E. c. alba*, and more nearly as it approaches the "lucky" white Heather of the Highlands, it is the pink which is generally more admired, with its perfectly coloured and formed little flowers. In sandy peat in the rock garden it is quite at home, while in beds or borders it is almost equally happy.

Not many of the Primroses or Polyanthes have favoured us with their flowers as yet. In few seasons have we had so great a shortcoming of winter blossoms on these favourite flowers. They might have had a premonition of what was before them if they had ventured to bloom. We miss them, though, with their varied colours and hues. The garden is the duller for their absence when we have become accustomed to their bright flowers. Even the double white Primrose, so profuse a bloomer, is unusually unkind, and is only giving its flowers as it were grudgingly. By-and-by it will strive to atone for this by profuse flowering.

Hepaticas, also, are less prolific of early flowers than is their wont. A few there are, and among them one on a double mauve variety distinct from the double red and double blue we all know. There are more varieties of double Hepaticas than most people are aware of. They are, however, difficult to obtain because of their slow increase, and because of this it does not "pay" the trader to take them up for profit. It is to the amateur that we have to look for new varieties of these. If a few enthusiasts who have time and space would work them up and raise seedlings by the thousand, we would in a few years time have something to show in the way of improvement of this old-fashioned and favourite flower.

In many gardens now we see what has been done among the Hellebores by seedling raisers. Lovely are some of the Lenten Roses, which, as hardy as any flower we have, only want a good strong soil and a half-shaded position to produce their flowers. With them improvement has gone on apace. Deep purple, bright purple, pink, almost blush, white, are the blooms of many, some being exquisitely spotted. Some of the white Lenten Roses are as pure as those which under the name of Christmas Roses are earlier in the year so highly prized. Daffodils are on the way, and soon *Narcissus minimus* and *N. cyclamineus major* will be in full bloom.

But we may bring this tale to a close. It is not a cheerful one. We cannot make bricks without straw, nor is it easy to be jubilant

when one is longing for sunny days and smiling flowers. Yet a thread of gold runs through the web of the season's trial. It meets our eyes now and again, and gladdens us because it reveals the truth that all is not dark and hopeless.—S. ARNOTT.

LONDON GARDENS OVER FIFTY YEARS.

No. 4.

ROSE-GROWING, in the open ground of gardens about the central districts of London, was a disappointing business half a century ago, and had been such, indeed, after coal became the main fuel of the metropolis. It was when wood kept up fires that the Temple Gardens displayed their memorable red and white Roses, while the grounds of Ely House yielded these flowers by the bushel. Varieties of the Provence are said to have been the last that flourished near the City. Persons have got specimens of the *Rosa gallica* to flower amid smoke, and a venerable Perpetual may be seen yet in some suburban garden, which has grown accustomed to the London atmosphere. Hedges in the semi-rural suburbs might formerly have been seen skirting the gardens of villas, with *Rose canina* shoots spreading over the Hawthorn bushes, but hedges have had to yield to walls or railings, as affording more protection. Occasionally there might be found in a London garden a specimen of the Clove-styled Dog Rose (*R. systyla*) which grew wild early in this century near Clapton and Hornsey, also in other places. It was transplanted to gardens because of its fragrant pinkish flowers, being in growth a slender species, but, under favourable circumstances it would reach the height of 10 feet.

Nothing probably can be brought forward more indicative of our progress in horticulture than the position which the Chrysanthemum now occupies amongst London flowers, for it is as largely grown both in houses and out of doors, valued specially because it keeps in bloom at a season when other flowers are scarce. Nor do the plants seem to be so sensitive to a city atmosphere at its worst as many favourite species are. This has been proved by the continued and successful cultivation of the flower in the Inner Temple Gardens. From all parts of London, fifty or sixty years ago, folks came to see Mr. Broome's autumn show, very creditable to him, but, of course, greatly surpassed by the recent exhibitions in the same grounds. Here and there a suburban garden had its bed of Chrysanthemums and Pompons. As a boy I remember visiting sometimes an old gentleman who had one of those gardens at Chelsea, common then, which were large for the size of the house to which they were attached. About half his space he had filled with Gooseberries and Currants, the other half was all devoted to Chrysanthemums. Pot culture of the plant was then in its infancy; gardeners were finding out how needful it was to protect choice kinds from wind and weather, also that many could be advantageously dwarfed. The Japanese sorts do not appear to have been known in Britain till 1870, but they stand first in popularity, and are most prolific in new varieties, perhaps seventy or eighty yearly. Hence we hear little now about the quilled, tasselled, Marigold, and Aster flowered, and other varieties our fathers thought charming. Some folks talked of a Chrysanthemum centenary in 1890, but others have tried to make out that the Chinese Chrysanthemum was unknown till 1818. Yet London, in his "Encyclopædia" of 1824 refers to it as a plant long familiar; in fact he names 1764 as the year of its introduction, though I think this date is doubtful.

The National Chrysanthemum Society held its fifty-second annual shows last autumn, the first, and other early ones, being on a very different scale to those which have for many years been so attractive. According to Mr. Dean, the indefatigable Secretary of the above Society, the principal new varieties come from France and America, few from Japan. If the ideal of a Chrysanthemum be its perfect shape, symmetry, and constancy in colour, the Japanese seldom approach this standard, and we shall award the palm to examples of the incurved, reflexed, and Pompon types. Somebody has said that the romance or poetry of horticulture lies in sowing seeds, not knowing what curious varieties may arrive which would apply to Chrysanthemum growing as to other plants which sport. Of course, out of the thousands shown at the Royal Aquarium, a large proportion come from a distance, but the suburbs of London are well represented both by cut blooms and pots.

Again, looking at exhibitions more local, we may refer to the annual show of the Highgate Chrysanthemum Society, which could draw 360 exhibitors last year, and to that of Waterlow Park, one of the best near London. Or, going southward to a poorer neighbourhood, as instancing a love for this flower amongst busy workers at the East End, we see an encouraging advance in last year's show of the East London Horticultural Society. Ten years ago, when a start was made at the People's Palace, the bulk of the exhibits came from West London; now the East-enders, though they receive friendly help, could really manage the show by themselves, so much skill have they acquired in gardening.

It has been proposed to supply young people with plants at the rate of a penny each, these to be thereafter produced, and prizes awarded to the best grown, which is a good scheme.

Glancing back, again, we can recall the fondness with which Londoners, when Chrysanthemums were few, cherished their Michaelmas Daisies, sometimes even forming a hedge of them between gardens in a row. A gawky, straggling plant, it has been called; yet there are some good varieties, and it will flower even in the air of a crowded city. It might have been seen giving a temporary cheerfulness in autumn to one of the old London churchyards, companioned, perhaps, by a sickly Guelder Rose, or a mournful Elder bush. In 1848, interments still took place within churchyards that had become dangerous nuisances, so slow are we to abolish evils all too obvious. It was no wonder that cholera should ravage many districts in 1848 and 1854; instances had even occurred of sheep being poisoned that were fed upon the unwholesome grass some produced. Many became resorts of the wandering cats of the neighbourhood, and it was not unusual for the garden portion of a burial ground to be cleared of weeds but once in the quarter. At length, in 1853, an Act of Parliament enforced the closure of all churchyards. But this did not quite remedy matters; there arose a danger that some would be built upon, converted into builder's yards, or otherwise desecrated, and, indeed, before very long had elapsed after burials ceased, not a few became repositories of all sorts of rubbish from the streets around.

Slowly it dawned upon the minds of sensible persons that places closed to the dead might be opened under altered conditions to the living; hence the movement, so fruitful in result, for the transformation of disused churchyards into pleasant gardens. Probably it was quite as well that a number of them were left alone for years, before any disturbance of the ground took place, which might otherwise have been mischievous through the diffusion of noxious gases. At least, I remember well my visit to a large suburban ground at Chelsea, while in process of conversion by extensive digging, and the experiences of eye and nose and mouth were painful.

Instances there are, however, of a burial ground becoming a garden or public resort without the removal of the monuments and stones. For example, there is the largest open space within the East Central District familiarly known as Bunhill Fields, which is in extent about 6 acres. For a long time it was the great burial ground of Dissenters; then it became the property of the Corporation of London, who spent £3000 upon it and made it free to the public; but we cannot call it a garden. Four of the London churchyards, as Mrs. Basil Holmes remarks, occupy the position of pioneer gardens. One of these is the historic little plot, only a quarter of an acre, in the midst of Drury Lane, which was a garden till, it being impossible to preserve the plants, it was turned into a gymnasium for children. Another is St. Botolph's, Bishopsgate, opened about 1876, but afterwards closed for some years. It is singular that the City has four churches named after this worthy, and all their yards are now public gardens. Right in the City's heart that of St. Botolph's, Aldgate, is wonderfully attractive though small in size. It was laid out by the Metropolitan Public Gardens Association. In May, 1892, it was opened by the Hon. Sir Charles Freemantle.

Then there is the churchyard of St. John's, Waterloo Road, noticed, no doubt, by some of the many thousands who travel on the South-Eastern line between Charing Cross, Cannon Street, and London Bridge. It was opened in 1877, and has several good trees, Elms, Limes, and Planes. I believe, indeed, a few years ago someone asked a scientific journal how he might establish a rookery there. The difficulty would be, probably, how the birds should get food if they settled in such a place, there being no fields near in which they could forage. Replying to a similar question, perhaps half in joke, an editor suggested the placing of a number of old birch brooms in the trees, so that rooks brought there might suppose it a deserted settlement.

The garden of St. George's-in-the-East is a memorable one, and has afforded enjoyment to myriads of young and old for full twenty years. We have a graphic description by the Rev. Harry Jones, of the trouble he and his friends had in obtaining leave to lay out the ground as a garden, adding to it the Wesleyan plot adjacent, which makes the whole extent three acres, a great contrast now to what it was in 1850—"a dark and clayey cat walk," so "Household Words" described it then. During summer the beds are full of flowers, and when I visited it in July many white butterflies were on the wing, to the joy of the children, if not to that of the gardener. Lastly, amongst the pioneer gardens we must mention the important one of St. Pancras, a slice of which was taken by the Midland Railway, which has recently threatened another portion. A hundred years ago St. Pancras was only a village church, but time has surrounded it with busy streets. With the addition of an old burying-ground of St. Giles's, this St. Pancras garden contains nearly seven acres, and is much frequented. One of its peculiarities is a "dome" and "trophy," composed of hundreds of headstones; elsewhere I have seen fragments of them formed into rockeries.—J. R. S. C.



CLASSIFICATION OF INCURVED.

I would like to again call attention to what can only be considered an unfair proceeding on the part of the Classification Committee of the N.C.S. A list of varieties which have recently been classed as incurved has been issued to all affiliated societies with a request that these societies insert this list in their schedule of prizes. I have since received several schedules in which it is stipulated that only the varieties classed as incurved can be shown in that section. This new list issued by the N.C.S. contains novelties which few have seen or even heard about; one is not to be sent out until the season 1900. Two varieties which should have been included are omitted, thereby deterring them from being exhibited at many of the most important exhibitions. I am referring to Lord Coleridge and Major Matthew. The first named has been before the Floral Committee several times, and has twice been returned with the request "to see it again." No doubt has been expressed as to its being a true incurved. The other variety was certificated by this Committee on the 21st October, and has also received an award of merit from the R.H.S., whilst the whole horticultural press has commented favourably on it. Is it not remarkable that whilst unknown novelties are cited a certificated variety is omitted?—W. J. GODFREY.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE annual dinner of this Society was held in the Masonic Hall on Saturday evening, the 18th inst., when about a hundred members, patrons, and delegates were present. W. A. Milner, Esq., J.P., the President of the Society, occupied the chair, and was supported by Mr. H. J. Jones, Mr. R. Stewart, Mr. Saml. G. Harrison, Mr. F. W. Littlewood, Mr. S. W. Seagrave, Mr. W. Housley (Secretary), Mr. John Haigh, Mr. T. Nicholson, and Mr. N. Tunnicliffe. The time was unfortunate in respect to many of the Vice-Presidents and patrons, from whom letters of regret of inability to be present were read. Kindred societies sent a dozen delegates. The usual loyal toast was given by the President and duly honoured.

The toast of the "Kindred Societies and Visitors" was proposed by Mr. John Haigh, who gave all a hearty welcome to the dinner, and expressed pleasure on behalf of the Society at the good attendance of representatives. It was ably responded to by Mr. W. Nicholson (Wakefield Paxton Society), and Mr. T. J. Nelson (Chesterfield Chrysanthemum Society). "The President and Vice-Presidents" was proposed by Mr. F. W. Littlewood, and responded to by Mr. W. A. Milner in a kind and genial manner; he spoke in very high terms of the Society's work, and the manner in which, he could say from experience, it had been conducted. "The Sheffield Chrysanthemum Society" fell to the lot of Mr. H. J. Jones (London), who said the first time he visited Sheffield on its account, he thought what a dull, miserable place he had come to; but as soon as he became acquainted with a few officials and members, all the dullness vanished, and brightness and cheerfulness appeared in its place; and now he looked forward with pleasure to every visit he paid the Society, whose progress he had watched for some time past. He wished the Society continued success, and thanked the officials for their kindness to him on the occasion of every visit. Mr. W. Housley (the Secretary) responded to the toast, and briefly reviewed the history of the Society and its rapid development. In 1885 the cash taken at the doors of the exhibition was £29. In 1898 the amount had reached £174. When the National Chrysanthemum Society held a show in connection with the Sheffield Society in 1887, the gate-money was £90. In 1885 the number of members was comparatively small, now there were almost 300 members on the books.

The toast of the "Nurserymen and Non-competing Exhibitors" was proposed by Mr. P. T. Barton, who thanked them for their past assistance. Mr. John Artindale suitably acknowledged the toast.

The toasts were interspersed with songs, which made a most excellent and enjoyable musical entertainment.—J. H. S.

CHRYSANTHEMUMS IN VASES.

FROM the report of the meeting of the Executive Committee of the N.C.S., page 121, I note a class for Chrysanthemums in vases of twelve varieties has been included in the programme for next season. Each vase is to contain *five* blooms, of each variety. Surely such difficult conditions must limit competition; this is not what should be encouraged. Five blooms of any one variety, especially if it is new or scarce, is a large order on one day. I fail to see how we are to have the best varieties included in an

exhibit that is hampered by such conditions. Evenness of bloom is especially a point to be aimed at by exhibitors in a class for vases of Chrysanthemums, and the appearance of a vase containing four good blooms and one rough will not be improved by the inclusion of the latter. This is often a necessity if some particular variety is to be staged. Far better have a class with easier conditions and praiseworthy exhibits. Keen competition and high quality are, or should be, the aim of the executive committee of any society.—E. MOLYNEUX.

MR. WELLS' CHRYSANTHEMUM BOOK.

THE able grower and energetic chrysanthemumist of Earlswood sends us a copy of his revised edition of "The Culture of the Chrysanthemum." It is a clear and practical exposition of the author's methods of procedure in raising and growing healthy plants for the production of superior blooms and for decorative purposes. The various details as carried out by Mr. Wells are narrated in a manner that can be easily comprehended, while some errors to be avoided are also pointed out. Several photographic illustrations show how well the plants are grown; insects—friends and foes of the Chrysanthemum—are also depicted, and the "rust" in different forms illustrated. Mr. Wells in combating this enemy relies on periodical syringings with a mixture of an ounce of soda and half a wineglass of paraffin in 2 gallons of lukewarm water, starting with the cuttings. The book comprises upwards of 100 pages, both paper and printing being alike good. There appears to be no extraneous matter to divert attention from its usefulness, and the issue is altogether a creditable production.

THE EGYPTIAN.

MR. WILKINSON (page 108) takes exception to this Chrysanthemum being classed by me as a poor type of an incurved bloom. I fear he has little chance of convincing the general body of cultivators that it is a typical incurved bloom unless he brings much more support into his argument than he has yet done. The variety was introduced in 1896 as a Japanese incurved. I am not certain about its origin, but Messrs. Nathan, Smith, & Son, the American Chrysanthemum raisers, described it in 1896 as a Japanese, as did Mr. Wells in the same year. Mr. Jones and Mr. Godfrey, in their 1897 and 1898 lists, class it as an incurved, but both are careful to advise growers to allow the plants to carry more than the orthodox number (three) of blooms, possibly because they fear it would betray its true character under the ordinary method of cultivation.

The fact of The Egyptian being so conspicuously absent from competing stands during the last two seasons is a sufficient proof to me of what cultivators generally think of it. Exhibitors are not slow to appreciate a desirable variety. Mr. Wilkinson must present higher credentials for his protégée than he has done before it meets the approval of growers generally, and especially of—SADOC.

LATE CHRYSANTHEMUMS.

IN reference to the note on page 112 I see no fear of the reign of the autumn queen waning. The production of huge flowers may decrease, but for home use and decoration I fail to see what can to any extent replace our old favourite. The demand, to my own knowledge, increases, both for quantity and a lengthened period of flowering. Leaving out what are known as summer flowering Chrysanthemums, the season may be said to commence in October and continue well into the new year. This is the time during which we, with not the best of means, manage to supply plants and cut flowers, while others prolong the season still further.

I can remember when Ethel and Guernsey Nugget were standard varieties for late flowering, and I believe the former is to some extent in use still in some market establishments; they were good and useful, but are now in a great measure superseded. Those we mainly rely upon for late use are W. H. Lincoln, Etoile de Lyon, Princess Victoria, and L. Canning. Boule d'Or I have found helpful grown on terminal buds. Challenge is not free, but is of a bright colour. Princess Victoria, L. Canning, and Boule d'Or are propagated when the general stock is inserted, and W. H. Lincoln and Etoile de Lyon about the end of February or beginning of March. They then, as a rule, flower together, giving us good results in midwinter, when the November plants are things of the past.

The cuttings are rooted in 3-inch pots, and receive the usual repotting and staking as needed, until the final move into 8 or 9-inch pots has been reached. We pinch out the points of the shoots of W. H. Lincoln and Etoile de Lyon once, but the others are allowed to grow naturally. It is customary to give Chrysanthemums as much light and air as possible after housing, but late plants demand still greater care and provision made for them in these respects. During October they are placed under protection at night when there is danger of frost, and in November are taken in every night and turned out every morning. The trouble is repaid afterwards with clean bright flowers.

One of the causes of the buds of late Chrysanthemums going blind is, I think, that, the feeding for the main stock being over, the remainder are sometimes neglected. This should not be; all the help possible ought to be given to bring the flowers to perfection at the most trying period of the year. There are, of course, other varieties which may be employed. I have merely named those which we have found of the greatest service.—J. SHALFORD.

DEATH OF THE REV. A. HEADLEY.

ON the morning of Wednesday, February 15th, passed away, after exceeding the allotted span by three years, the Rev. A. Headley, whose writings over the cognomen of "Wiltshire Rector" have endeared him to many readers of the *Journal of Horticulture*. His was an ideal life, though accompanied of late by pain and suffering—patiently borne, and his end is peace. He has gone whence none returns, and the day will never dawn when his memory shall have faded from the minds of men. To those who had the pleasure of personal acquaintance he was a valued friend, as was he to those who knew him by his writings alone. Through the medium of these pages, which he adorned—as it is given to few men to adorn them—he made many friends. His steadfastness of purpose, his innate charm, his geniality, and his fascinating personality placed him amongst the foremost of men, and we must now, with melancholy regret, assign him a position amongst the illustrious dead—illustrious in his purity of soul and his love of Nature. To all his friends the knowledge of his death will bring a wave of sadness and a flood of memories of the past, and these may find some satisfaction in seeing his portrait, which was taken in 1884—fifteen years before the end.

His son, the Rev. A. A. Headley, writes:—"My father had a bronchial attack, and apparently recovered from it, on Sunday, the 12th inst., but on Monday had a seizure from which he never really rallied. He sank most peacefully, and painlessly (we believe). He was the son of a doctor in the Fens, and there he got his love for bird life, which lasted to the end. He was at Corpus Christi College, Cambridge, and began his clerical life as a curate in Sussex, but from 1856 to 1890 was Rector of Hardenhuish, Wilts, where all his 'Wiltshire Rector' papers were written. He originated in one of his new year's addresses the phrase "Our Journal," and that was his loved term for the *Journal of Horticulture* to the end. He had many warm friends through it. I think he wrote for the Journal as early as 1864, and I know what a joy it was to him. No one must think the work of the village suffered. He was a model country parson, and a father whose memory will ever be green. He was buried in the churchyard here (Porchester). It was his own wish. He had a great horror of being moved a distance, and used to say, 'Where the tree falls, there let it lie.' Some might think that he ought to be in Hardenhuish churchyard, but I think it is better as it is. He came here in 1890, when he had the seizure which compelled him to resign. He liked the place, and the people were truly friends to him."

It was in the year 1864 that the deceased, in a charmingly written article, first used the expression "Our Journal," which years have made more and more popular. It will not be out of place now to show the sense in which it was employed on its inauguration.

"Now for 'Our Journal.' What a pile of them! How soon a man gets interested in a periodical! Just, and only just, two years ago I saw a number for the first time in a gardener's cottage (fit place for a 'Cottage Gardener'), and now I look forward to Wednesday's post, and cut the Journal open quickly, and know the different styles of the writers, and read my own articles."

Writing "A Few Words to all Our Friends on the New Year" in 1869, "Wiltshire Rector" said:—Gardening ever claims, and rightly, our first thought and attention. Our gardens cheer and comfort us. "In single and married there is but little difference," said Jeremy Taylor, "single life is solitude, married life is solicitude." I accept the definition, and I ask, Are not gardens and works on gardening companions of solitude and cheerers of solicitude? In countless instances they are both. Single life and gardening have gone together in all ages. The Essenes were great gardeners, so were the monks and nuns of the middle ages, and so, according to Mr. Hepworth Dixon, are the interesting celibates of the New World, the American Shakers. As to a garden being a solace to the man full of cares, notice how often you see grave-browed, city-looking men in omnibuses bound for the outskirts of London with plants on their knees, telling of villa gardens delighted in and giving delight. I have looked at such men and thought what a comfort your gardens are to you, my friends, and your wives know it too, and if they are wise they coax you to take a stroll with them in your garden, when (that trial to husband's patience) dinner is late.

Let me drop a word of advice to young beginners—the young lads into whose hands this paper comes after their seniors in the garden have read it. Visiting recently the Orchid houses and pineries in a noble garden, I asked the intelligent head gardener how he got on with the young lads under him, to whom he must confide a good deal of work, although if they failed or exceeded in duty, he would have to bear the blame. His answer was, "I get on with them very well, if they come to me knowing nothing, and confessing they know nothing; but if they fancy they know something when they really know nothing, they give me a world of trouble. I have now a couple of lads who came to me quite ignorant, and good lads they are, for they are willing to learn, and simply carry out my plans to the letter, and to please me, and will make good gardeners."

Young men! be willing to learn, watch, read, take pains, and do not presume to know before you do know. In the highest things it takes often half a life to understand our own ignorance.

Science readers! I hope this year you will turn to our pages and find the needed information. Practical readers! I hope you will do the same, with the same result. General readers! I hope many papers this year will be so written as to catch and interest you, and that the whole tone of our pages will elevate all. A bookseller said to me, unasked, "A gentleman gave up taking *The Journal of Horticulture* at the end of the year, but came to me in February, and said, 'I must have that publication again, I miss it, and cannot get on without it; it seems wanted by all of us, so send it to me.' I hope this is a testimony that we writers do not labour in

vain. As to my own experience, this expression has been in constant use among us in our house for years, "Our Journal never brought anything but happiness to our home." And much reason have I to use that expression when I sit by the winter's fire, and count the long roll of friends made by means of its pages. Perhaps much of the pleasure our readers feel arises from the fact of the undying love of nature which is at the bottom of every heart, and which only wants cultivating. And of all nature the lovely flowers stand next the heart, they look up, and are close to the eye of the child, who falls in love with them at once, and they entwine themselves around the heart of the old man and woman. The love of flowers in some hearts dawns very early, in other circumstances draw it out, but in all cases it is, love me once and love me ever. Said a clergyman, "The love of flowers came to me in trying to please the taste of my delicate wife. I took the cuttings under her guidance, and to spare her strength, and to please her; then I watched their progress, and so on from one thing to another, and I loved the flowers, first for her sake, then for hers and their own." The love of Nature is sometimes marvellously great. Thus you who know old London will remember a narrow, close, half-stilling street, called Little Tower Street; in that street, says Peter Cunningham, Thompson composed his poem of "Summer."

Such are examples of the work of a man whose hobby was Nature. The words golden then are golden now, and may advantageously be read by everyone to-day, more particularly perhaps those referring to the rising generation. The sentiments therein expressed might well have been written especially to the members of the "Young Gardeners' Domain."





RECENT WEATHER IN LONDON.—The fog that enveloped the southern suburbs of the metropolis on Saturday afternoon and evening greatly impeded traffic, and caused much inconvenience to travellers. Sunday was dry, as was Monday, both days being cold, with the wind in the east on the latter day. Tuesday was most pleasant, for though rather cold, the sun shone brightly, and on Wednesday similar conditions prevailed.

WEATHER IN THE NORTH.—On two mornings of the past week slight frosts occurred. Generally dull and wet weather has prevailed, and little sunshine. Monday was a good day, with 3° frost in the morning and a cold N.E. wind, with threatening of rain in the afternoon.—B. D., *S. Perthshire*.

VEITCH MEMORIAL FUND.—At a meeting of the Trustees held on the 17th inst. it was resolved to place a medal and a prize of £5 at the disposal of the Trowbridge Horticultural Society, and a medal and prize of £5 at the disposal of the Borough of Hanley Floricultural Fête, to be competed for at their respective forthcoming annual shows. It was also resolved to place the sum of £20 at the disposal of the Lindley Library Trustees.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, February 28th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on the "Colours of Insects: Their Meaning and Use" (illustrated by limelight), will be given at three o'clock by Mr. H. L. T. Blake, F.R.H.S.

THE DECOY, EASTBOURNE.—The Eastbourne Town Council has decided to purchase from Mr. Freeman Thomas a picturesquely wooded area called The Decoy, at Willingdon, for the purposes of a public park. The ground is on the north side of the borough, and comprises 82 acres. In conjunction with this purchase the Council resolved to construct a low-level drive from Eastbourne to Willingdon, with a view to its connection with the circular drive recently carried out by the Duke of Devonshire and Mr. Davies Gilbert, the local landowners.

KEW GARDENS.—A writer in a daily contemporary says:—"I would certainly recommend anyone having a spare morning or afternoon just now to take a drive down to Kew Gardens. The grounds are really looking beautiful, even at this time of year. There are thousands and thousands of Snowdrops about the place, growing in great patches under the Rhododendron bushes. The effect is very pretty, and looks for all the world as though there had been a heavy fall of snow which had partly melted, leaving huge patches of white here and there on the grass. The Crocuses are all coming into bloom, and the greenhouses are very beautiful, being filled with masses of white Lilac, Cyclamen, Violets, and other charming spring blossoms."

HORTICULTURAL CLUB.—The twenty-fourth annual dinner of the Club took place on Tuesday, 14th, at the Hotel Windsor, Victoria Street, Westminster; it was in every way a most successful one; for the first time in its history ladies had been invited and formed about one third of those present. The chair was occupied by Sir J. D. T. Llewelyn, Bt., M.P., Chairman of the Club, who, after proposing the usual loyal toasts, in happy, appreciative terms proposed the prosperity of the Club. He rejoiced greatly at the step forward which had been made, and he assured the ladies that their presence was much appreciated. This toast was responded to by the Secretary, who gave an encouraging account of the financial condition of the Club and of the harmony and good feeling that prevailed amongst its members. Mr. George Bunyard had most kindly arranged for a selection of vocal and instrumental music to be given during the evening. Mr. Harry Veitch placed a beautiful stand of the flowers of greenhouse hybrid Rhododendrons in front of the Chairman, and a sumptuous dessert, consisting of Pine Apples, Grapes, Californian Easter Beurre Pears, Peaches from the Cape of Good Hope, and Bananas, was placed upon the table owing to the kindness of Messrs. Assbee, George Moore, Peter Kay, and M. J. Garcia. The evening was a most agreeable one, and the hope was generally expressed that it would not be long before the ladies were again invited.

A GOOD EXAMPLE.—A concert was held on 14th inst. in the Village Hall, under the auspices of the Chislehurst Gardeners' Mutual Improvement Association, in aid of the Royal Gardeners' Orphan Fund. This proved a great success, as after paying all expenses the Committee will be able to hand to this deserving Institution the sum of £17 10s.

APPLE ROYAL JUBILEE.—I have a favourable word for this Apple, which I regard as one of the best in its season—November. The tree grows well, is compact and stocky, and I have no doubt when the trees are thoroughly established it will bear freely. The fact of its being late in opening its blossoms is an indication of annual cropping. The fruit is a clear lemon colour in the skin, and the quality is grand as a cooking Apple.—E. M.

SUTTON COLDFIELD GARDENERS' ASSOCIATION.—The annual dinner of this enterprising Society took place on the 14th inst. Alderman A. H. Evans (the President) occupied the chair and Councillor Vale the vice-chair. The Treasurer (Mr. C. Townshend) read a most favourable balance-sheet of the past year's management. Mr. Thos. B. Grove, the Hon. Secretary, was heartily thanked for his long co-operation, to which he responded in suitable terms. Songs and recitations contributed to the conviviality of the evening.

DOLLIS HILL.—We learn that the Willesden District Council has been considering the purchase of 98 acres of the Dollis Hill Estate, upon which they have an option. The sum asked is £50,000, a low price for such valuable land, but too large for the Council to pay; whilst the option expires at the end of April. It has been decided, therefore, to appeal to the London County Council, the Corporation, and the City Companies for help, and it is hoped in the interests of Willesden people that the appeal will not be fruitless. About 43 acres of the park are well timbered, and this part would probably be left as it is. From the high ground view can be obtained. On the east Child's Hill and Cricklewood; on the west, Neasden; on the south, Willesden Green; and on the north the ornamental waters of the Welsh Harp can be distinguished.

DEEP POTTING TOMATO PLANTS.—I may be improperly sceptical, but I have grave doubt whether the deep planting of Tomatoes, for the purpose of inducing supplementary roots to break from the stems buried in the soil is wise; or, even if wise, yet productive of better results than when the natural roots only are buried and the stems left above the soil. Really the primary object of the advocates of deep planting seems to be to enable them to hide bad culture in so raising plants from seed that they are drawn and weakly with long bare stems instead of having them leaved to the bottom, as they should be. I should like to hear of some good practical grower experimenting by planting six plants of any one variety shallow, not covering the stems as advised, and six similar plants with stems buried some 4 or 5 inches, and test results. My impression is that stem or auxiliary roots would simply act to the detriment of the natural or basal roots, and that is all.—A.

THE PYRAMIDAL PRIMULAS.—We have seen ample evidence of late of the apparent popularity of the stellata or The Lady section of Chinese Primroses, as not only now do all growers of these plants for seed have them, but they are in great demand by gardeners. All of them seed very freely. Certainly they in their original forms differ little from the inferior stocks commonly found grown fifty years ago, except that the plants have more correct pyramidal habits. Of those first introduced the flowers were poor, small, thin, and so inferior, that they were miles below the Chinese Primroses of to-day, so far as size and quality were concerned. But their charm laid in their tall, graceful, pyramidal habit of growth, making them pretty vase, basket, or room plants, and effective mixed with other plants on stages or in floor groups. But no one must rely on a popularity that is dependent on such fleeting matters as mere taste, as this, like fashion, may change every year. But if the light graceful pyramidal habit can be preserved, the flowers materially enlarged and fringed, showing greater substance, yet not too large, and giving good variety of colour, then the strain may out from general culture the very large-flowered forms that have, almost as a fault, far too large blooms, which, in falling, leave big gaps in the flower heads. No doubt some of the stocks staged at the Drill Hall the other day from Swanley have, in the direction of enlarging the flowers, gone far enough. It is evident, in relation to these, that going farther means the destruction of the pyramidal habit. One of these forms seems to be, as a greenhouse plant, perfect, and should, grown from an early sowing, easily give tall, massive heads, 18 inches over. Still, in relation to them, the possibility of picking from the plants small stems of blooms for little glasses and vases renders the plants so useful.—A. D.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Temperature of the Soil.			Lowest Temperature on Grass.	
		At 9 A.M.		Day. Night		Rain.	At 9 A.M.			
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-ft. deep.	At 2-ft. deep.		At 4-ft. deep.
1899.										
February.										
Sunday .. 12	W. S. W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	
Monday .. 13	W. S. W.	45.1	42.1	51.3	42.8	0.14	45.6	44.8	44.6	
Tuesday 14	S. S. W.	51.8	48.7	53.7	44.5	0.15	45.2	44.8	44.8	
Wed'sday 15	S. S. W.	46.6	44.8	50.9	42.6	0.02	44.5	45.1	45.1	
Thursday 16	W. S. W.	47.6	45.7	50.8	40.5	0.31	44.8	45.1	45.3	
Friday .. 17	S. E.	42.3	41.5	50.5	38.6	—	44.8	45.2	45.5	
Saturday 18	E. S. E.	43.2	41.9	50.4	38.2	—	42.5	45.1	45.6	
		40.1	39.9	52.6	37.6	—	42.6	44.5	45.8	
MEANS ..		45.9	44.3	52.0	38.8	Total 0.62	44.0	44.8	45.2	
									32.0	

The first four days of the week were wet, and on Friday the wind changed to S.E., and brought with it fog. Saturday was also foggy, being very dense at night.

— **IN THE MARKETS.**—This is but the middle of February, yet our fruiterers are offering real Strawberries, English Asparagus, as well as English new Potatoes. The Strawberries are 10s. a basket of, perhaps, twenty-four; the Asparagus is 7s. a bunch of, perhaps, a dozen heads, and the new Potatoes are 1s. a pound.

— **SHADING GLASS HOUSES.**—Messrs. Wood & Son, the well-known sundriesmen of Wood Green, London, have sent us a sample case of the several shadings that they stock. The importance of due and proper protection of plants from too much light cannot be exaggerated, while darkness is equally injudicious. In the samples before us, and which all readers may have if they send to the makers, there are materials of every texture, from the stoutest hessian to the widest meshed hexagon netting, this latter being particularly valuable, as it is wasp-proof. The non-rotting scrim will be widely appreciated for various purposes.

— **GLADIOLUS CHILDSI.**—When Mr. Max Leichtlin, the celebrated German horticulturist, turned his attention to the finer varieties of *gandavensis*, and crossed them with the beautiful *Saundersi*, with the result that *Childsi* was produced in 1892, very few would have imagined that in this short space of time such wonderful development could have taken place. Yet so it is, and at the present time it is questionable whether we have anything to equal, and certainly nothing to supersede, them amongst the whole range of *Gladioli*. The main features of the strain seems to be the vigorous growth and long spike, the individual flowers being remarkable for size, whilst even the smaller forms seem to flower profusely. In colour every shade is represented, the mottled and spotted forms being charming. Corms purchased now, potted in 4½-inch pots and placed under glass, transferring to frame when growth commences, will be found of great use for early work and in condition for planting when the frost disappears.—R. P. R.

— **CYCLAMEN AT FARNHAM ROYAL.**—There is special pleasure in seeing Mr. W. James' fine collection of *Cyclamen* at Woodside, Farnham Royal, because, unlike the market growers, none is sent to market, and they are not unduly forced. They bloom gloriously from Christmas onwards, and when I looked into the house a few days since were in superb bloom. Then there is so much more of fire and brilliancy in the dark coloured ones, when seen under the clear pure light of the Buckinghamshire skies, and when now and then a gleam of sunshine lit up the flowers they glowed superbly. I have nowhere seen finer pure whites, whites with red and purple bases, roses with crimson bases, rich reds, and crimson reds as were to be seen here. The collection is not a great one, but it is of the finest quality; a beautiful salmon-tinted one with red base, blooming profusely, is a marked feature. None, however, excels in size, form, and floriferousness the pure whites, dark base whites, and roses and the blood reds. Some of these latter have flowers quite up to the form and dimensions of the giganteums, for the giant form dominates all the strain. There are a few of the new and oddly formed *Papilio* strain, but the plants are not strong; even the best, however, show blooms that look poor as compared with the noble, erect, and finely formed flowers of the older stocks. The prettiest is a red that has flowers of ordinary *Cyclamen* form, the edges of the petals being slightly fringed.—WANDERER.

— **DWARF KIDNEY BEANS.**—Very interesting should be the trial of these summer Beans, which is to be carried out on an extensive scale at Chiswick this year. It is intended to sow all varieties having seeds of similar appearance side by side, as that will enable comparisons to be more readily made. No doubt comparatively thin sowings will also be practised, as it is only when ample room is given that plants can display their true characteristics. There seem to have been many additions to our list of Dwarf Kidney Beans made during the past few years. All the same, because of the nature of the plant, no very striking variations can well be furnished; but of the newer ones, some may be found fit to supersede old varieties. Obviously the short-podded forcing section will make a poor show outdoors compared with some others, but their uses for forcing cannot be too highly estimated.—D.

— **AMERICAN FRUIT GROWERS.**—The fruit growers of the United States (chiefly those of the Pacific slope) supply at least four-fifths of all the green fruit consumed in Manitoba and the North-west Territory of Canada; but there is a likelihood, owing to the energy of our Canadian cousins, that this practical monopoly of the market may not be maintained in the future. Owing to the excellence of their product and the great care they have exercised in its selection and packing for shipment, the States fruit farmers have been able heretofore to defy the competition of Canadian producers, notwithstanding the fact that the latter have much the advantage in shorter lines of transportation. Now Canadians seem to be waking up to the situation, and are bringing urgent pressure to bear upon the Dominion and provincial boards of agriculture to induce them to assist in providing better facilities for preserving, packing, and transporting Canadian fruits. These bodies have hitherto, says the "Rural World," bent all their energies toward securing our own and other European markets, but are now making a vigorous effort to capture the home trade. Encouragement is being given to the erection of cold-storage plants and packing houses, and transportation lines are being worked. The United States system of packing fruits has been adopted, and altogether a much stronger bid will be made for these markets than previously.

— **FEVER IN PLANTS.**—Some experiments by Mr. H. M. Richards are thus epitomised in a note in "Natural Science":—"He finds that accompanying the increased rate of respiration is an increase in the temperature of the parts affected. A kind of fever supervenes, and, as in the case of respiration, the disturbance runs a definite course, and attains its maximum some twenty-four hours after injury. It is interesting to note that the attempt to rally from an injury is accompanied by somewhat the same symptoms, increased rate of respiration, and evolution of heat in plants as in animals. Owing to the nature of the case, the reaction is less obvious in the former than in the latter, and a delicate thermo-electric element was required to appreciate the rise in temperature; but, compared with the ordinary temperature of plants in relation to the surrounding medium, the rise after injury is 'as great, if no greater, than that in animals.' The maximum in all the plants investigated was between two or three times the ordinary excess above the surrounding air. Potatoes proved the most satisfactory objects for experiment, and it was found that in massive tissues (such as Potatoes or Radishes afford) the effect of injury, was local, whereas in the case of leaves (e.g., Onion bulbs) much greater extent of tissue was sympathetically affected."

— **ROYAL METEOROLOGICAL SOCIETY.**—The monthly meeting of this Society was held on Wednesday evening the 15th inst. at the Institution of Civil Engineers; Mr. F. C. Bayard, LL.M., President, in the chair. Mr. E. Mawley, F.R.H.S., read his annual report on the phenological observations, and stated that the weather of the past year, taken as a whole, had been throughout the British Isles very warm and dry. Wild plants blossomed much in advance of their average dates until about the end of March, but after that time until the close of the flowering season they were mostly late. Favoured by the rains in May the crop of hay was everywhere a remarkably heavy one, but the long drought which followed dried the pastures, and caused a scanty yield of roots. The dry season suited the cereals admirably, and especially the Wheat, of which there was a very abundant crop. The yield of Barley was nearly as exceptional, while that of Oats, except in the north-east of England and in Scotland, was also unusually good. There was a splendid crop of Potatoes in Ireland and in parts of Scotland, but elsewhere the yield was, on the whole, moderate. Apples, Pears, and Plums flowered abundantly, but adverse weather conditions, and the dry subsoil in the spring, caused an irregular "set" of fruit, so that in all parts of the kingdom these crops were, as a rule, below average. On the other hand, there were good crops of all the smaller fruits. A paper by Professor W. M. Davis of Harvard University, U.S., on "The Circulation of the Atmosphere," was read by the Secretary.

— BIRMINGHAM GARDENERS' ASSOCIATION.—At the recent tea and social gathering of this Society, held to celebrate the thirteenth anniversary, the newly appointed President, Prof. Wm. Hillhouse, occupied the chair, with Mr. W. B. Latham as Vice-Chairman. The Professor expressed the pleasure it afforded him in being elected as President of the Association, of which he had had the honour of being the Vice-President ever since its inception. He gave an interesting review of the work of the Society, and commented with satisfaction upon its programme for the ensuing year, and especially upon the proposed visit to Woburn Abbey, the historic seat of the Duke of Bedford, famous for its arboreal features, and to the Duke's experimental fruit farm. The enjoyment of the evening was much enhanced by the instrumental and vocal renderings of several of the members and lady friends.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14TH.

SCIENTIFIC COMMITTEE.—Present: Mr. McLachlan (in the chair); Mr. Hudson, Rev. W. Wilks, Mr. Michael, and Rev. G. Henslow, Hon. Sec.

Diseased Apple twigs.—These were received last December from Rev. A. Foster-Melliar. Prof. W. E. Smith, after a prolonged and difficult investigation, has pronounced the disease to be due to bacteria, and forwarded the following interesting report:—"The portions of branches of Apple sent show a disease with the following characters. The wood is sound except where in contact with the bark; the bark is completely disorganised with exception of the hard fibres and the dry outer corky layer. Investigations for signs of fungi or insects made on arrival of the material (December 19th) gave no result. Portions were placed in a moist chamber and examined during January. The bark became soft and spongy, no fungus-growth appeared, but bacteria were found in numbers. Amongst other bacterial forms, a bacillus was common which agreed with that figured by Duggar (Cornell University Bulletin, 145, 1898). Other symptoms, as far as presented by the material sent, agreed with American descriptions of the bacterial disease 'fire-blight.' We have, however, no record of the tree having blackened twigs or leaves during last summer—an important symptom of this disease. 'Fire-blight' was proved, chiefly by the work of Burrill in 1880, to be due to the action of bacteria. A good general account, based on further research, is given by Waite (Year Book of the U.S. America Department of Agriculture, 1895). The disease appears in America on Pear and Quince oftener than on Apple, and is also known on allied species. It attacks chiefly vigorous well fed trees with much soft young wood, similar, in fact, to this Apple tree as described by your correspondent. A warm moist season or situation favours the disease; dry weather checks it, and during winter it makes little progress. The remedy is to prune off thoroughly all parts which show discoloured or destroyed bark, and to carefully burn them. Pruning is best done in autumn or spring. The cuts must be made well below diseased parts, and large wounds should be painted with tar. If the pruning be severe it may induce a large growth of young wood next season; this must be carefully watched, as it is an excellent starting point for a reappearance of the disease. The bacteria are propagated by insects, which visit a gummy fluid containing bacteria which is given out from diseased parts of the bark. Then they visit a similar fluid exuded from the bark where broken by cuts, boring insects, or other agents, and they infect this with bacteria. A similar fluid in the flowers also tempts insects there, and the bacteria thus introduced destroy the fruit crop." A unanimous vote of thanks was given to Prof. Smith for this valuable report.

Tupistra nutans.—Mr. Jas. Hudson exhibited a specimen of this uncommon plant in blossom. There are but four genera of the *Aspidistrea*, a tribe of Liliaceæ; *Tupistra*, with 304 species, being natives of Himalaya or Burmah. It bore dense spikes of white flowers with an expanded border and a dark centre.

Pear tree with caterpillar.—Mr. McLachlan showed a twig with the interior eaten away by the caterpillar of the wood leopard moth, *Zeuzera Aesculi*. It was received from Mr. N. Nutter of Leigham Cottage, St. Julien, Old Streatham. The best remedies for this and boring beetles is to run a stout wire down till it pierces the grubs. Petroleum or spirits of turpentine poured down the hole would also probably be effective in destroying them.

Richardia, two-spined.—Rev. H. F. Goffe, Thoresway, Caistor, forwarded a specimen in which the uppermost leaf had assumed the form of an additional spathe—a not uncommon phenomenon. It was hoped that experiments would be made to fix this peculiarity if possible.

Cedar with aerial roots.—The following communication was received from Mr. J. W. Odell, The Grove, Stanmore, together with photos of the tree described, and a large mass of aerial roots:—"During the recent heavy gales considerable damage was done to one of the large Cedars of Lebanon in Mrs. Brightwen's grounds here; a huge branch was torn from the parent trunk, and revealed a very curious growth of aerial roots. I forward to you with this letter photos showing the broken branch in two positions, and also a part of the very large growth of adventitious roots. You will observe on photo (marked A) a large scar, corresponding in size and shape to the base of the branch on photo marked B. The roots sent

were growing from the edges of the contiguous portions of the trunk and broken branch, and grew downwards from this position towards the base of the tree, but had only penetrated so far as is indicated by a small branch at the base of the scar (seen on both photos). Both on the branch and on the scar left on the trunk the wood is very much splintered, and the roots were found not only in a large mass as sent, but also growing in between the splintered portions of the wood. The appearance of the fracture indicates, I think, some previous injury (perhaps by lightning), and as a consequence some moisture may have penetrated into the union between the trunk and the branch. I have once or twice before seen similar roots in broken pollarded Willows, but have never observed the formation of such adventitious roots in a Conifer, and thought perhaps it would have some little interest for your Committee of the R.H.S."

R.H.S. MEDALS.

WE seem destined never to hear the last of these Drill Hall awards. The Council in the recent report again adverts to them, and suggests that in making awards the Committees should remember more fully the distinctions that exist between traders' and amateurs' collections. In a certain sense the Committees will no doubt go on sinning, but the last thing needful is the drawing the various Committees' attention to the diverse positions of trade exhibits and those of amateurs, because the exhibits do that so thoroughly themselves. Take the recent meeting, what amateur could at this time of year put up a collection of Apples that could for one moment approach the grand collection Mr. Bunyard sent? Really not in all the world could anything like so fine a stand be seen elsewhere. There was the superb collection of Camellias from Mr. W. Paul, the beautiful Ferns from Mr. H. B. May, the beautiful Chinese Primroses from Messrs. Veitch and H. Cannell, just to indicate a few as samples of trade exhibits in comparison with which amateurs have nothing approaching them to show.

How is it possible for any just body of men in making awards to overlook the splendid evidences of culture seen? What is it to me who is the exhibitor? It does not concern me, or probably any other member of a Committee, who the exhibitor may be. The awards I vote for are made to the culture and the quality, and sometimes the rarity of the exhibit, as was the case with the wonderfully fine exhibit of Vanilla from Syon. The general public would never understand reasons why all amateurs' inferior products were put on the same plane of merit as superb trade ones.

There seems to be no midway between the present and not illiberal, yet not unduly liberal, method of granting medal awards, or of refraining from granting any whatever, not that I think anyone cares much for the real medal, so long as they get the card one, and the award is seen and recorded. Certainly much expense might be saved, and far more satisfactory results to exhibitors insured, if only card awards were made, each such award counting so many marks, and then at the close of the year some handsome medals worth having, or fancy plate, or other useful objects were given to the various exhibitors, in proportion to the number of marks obtained during the year.

The President of the Society mentioned that realising the granting from time to time of gold medals ostensibly, and not in reality, was an impropriety, a small die had been obtained to enable small gold medals, when awarded, to be given in future.

Mr. Elwes thinks the gardeners who really produce the exhibits at the Drill Hall should have medals awarded them, but seeing that by far the greater portion of the exhibits come from the trade, that proposal will hardly be found workable. There is not a gardener in the kingdom but would prefer medals with the Queen's profile on them to any of the Society's. If the getting of medals is the chief aim of exhibitors in sending such wonderful collections of exhibits to the Drill Hall, as between giving the medals or losing the shows, let the giving go on by all means.—A. D.

ASPARAGUS "MADE IN GERMANY."

MUCH has been written in the Journal lately about Asparagus, and I think it might interest some readers, although of no particular practical value, to know how they grow the "Grass" in Germany. Here, in Erfurt, there are considerable plantations, and it seems to do very well. The soil is a rather heavy but well drained loam, and as there is a salina in the neighbourhood, good grey salt can be obtained at a moderate price.

The treatment is different from ours, as only blanched stems are eaten, and if the tip has more than the slightest tinge of purple about it, it does not sell. In the plantation with which I am best acquainted, the crowns are covered with about 1 foot of earth the second year after planting, and are arranged in beds of two rows 18 inches apart with alleys between. When vacancies occur through plants dying, a hole about a foot across is dug, and the young plants placed in the bottom; the second year they are earthed and marked with a stake to show that they are not yet ready for cutting. In November the old stems are cut down, a dressing of short manure is spread on the surface, and the whole place dug over. In the height of the season the cutting begins at four in the morning and continues till sunset. As soon as the shoots cause the surface to crack a hole is scratched, and they are cut off with long knives made for the purpose.

From this it will be seen that it is laborious work on a large place. If the year is good, fine Asparagus may be had in the shops from 6d. to 9d. per lb. in the height of the season, but as labour is cheap the growers still secure a very good profit. I suppose it is a matter of fashion and custom, but I must say I find the green English Asparagus has more flavour.—C. S. H.

TROPICAL GROWTHS IN CEYLON.

PROBABLY few countries of the same size possess within so limited an area such numerous and diversified products. Taking that delightful vapour bath Colombo as a base from which to explore, one finds, of course, trees that delight in an equable steaming shade temperature of some 80° to 90°, and which may reckon upon, in addition to the ozone from the ocean, a more or less diurnal dose of rain. Here, then, the Banaua, Cocoa-nut, Mango, Bread-fruit Tree, with great varieties of Palms and Bamboo, flourish in common with spices innumerable. Pine Apples, Oranges, Pomegranate, and such like.

I suppose people get callous to it, but certainly I did feel qualms in letting the poor Cingalese coolie run for miles in this sweltering climate with his whole body, shining as if anointed with oil, steaming with perspiration. At Singapore it is, of course, just the same. They seem so wonderfully willing, however, and run mile after mile without seeming to expect to stop (luckily, Colombo itself is extremely flat), that one gives up the problem, unwittingly absorbed, it may be, by the objects of interest all around. One very long rickshaw run I took, right away round the lake to the Cinnamon gardens, and by a circuitous route back to the further end of the long sea front promenade. The fellow scarcely slowed to a walk more than once or twice. No one seems to attempt to walk in this place—perhaps after a year or two people are so enervated that they cannot; but as a passer-by, and at all times a keen advocate of shanks' mare, with the vitality of good Old England within me, I not only walked frequently, but sometimes even a considerable distance, and once indulged in the additional exercise of butterflying, and that, too, in the chief heat of the day. Curiously enough, I seemed to find little difference whether I lay under my mosquito curtains *in puris naturalibus*, or inclined any person in a long open chair on the verandah, or allowed my lordly limbs to be rapidly impelled through the air by a son of the soil, or whether I took the said pedestrian exercise *in propria persona*; in whatever case the result was the same—viz., I seemed covered with a perspiration oozing out of every pore from head to foot. Of course, up at Kandy it is not so bad. Here you may walk along lanes absolutely embowered in leafy foliage and overhanging fruits of multitudinous design, shape, and colour.

I know of few more beautiful spots than this lovely place, with its alluring lake and fascinating surroundings, not the least interesting, apart from the wonderful and varied growths all around, being the picturesque and very ancient Buddhist temple, the old librarian of which handed me his Cingalese carte-de-visite on making our adieux. Truly did I find Kandy and its vicinity a veritable Paradise. I think any month there was February, and though the insect creation was not yet in full swing, I obtained quite a tolerable amount of gorgeous butterflies wherever I directed my footsteps. The most curious, and one I believe to be found nowhere else, was a blue one with a single long horn or snout, half beetle and half moth, extremely pretty when fully extended. This I found on one particular tree in the Peradeniyeh Gardens. These most lovely grounds were my happy hunting grounds *par excellence*. A little Cingalese lad used to meet me there and do the running about, thereby helping me make quite double my usual "bag."

The flying fox which swarms in a large rookery here is a most curious creature. Neither shall I forget the exactions of a charming American lady (following her husband, a naval captain, round the world), whose interest centred to an extraordinary degree in the numerous species of Palm (no small order in itself), and tropical trees for which these gardens are famous. Among the former I think the Sealingwax Palm most appealed to me, the stem of which looked indeed like nothing else than a colossal piece of red sealingwax. Several plants we grubbed up together, but, alas! like some ravishing white Orchids which I slipped from the trees at Singapore, so far as I am concerned, none survived.

Walking back in the comparative cool of the evening from Peradeniyeh to Kandy, one passes under a canopy of branches from each side the road of Banana, Cinnamon, Nutmeg, Mango, Vanilla and Bread-fruit trees, to say nothing of numbers of flowering shrubs, scarcely noticing here and there tiny huts of Bamboo and Palm, so hidden are they among the foliage. A good deal of hillside in this neighbourhood is cultivated with Cocoa, Tea, and Coffee plantations. We saw, too, something of Sir Thomas Lipton's vast grounds.

Perhaps the most exquisite delight which I experienced while at Kandy was the nocturnal rickshaw ride. Sauntering along and dreaming of many things in the cool of the evening, after a generous dinner, a Cingalese runner would insidiously suggest to you, in a whisper, gliding out from the darkness, the delights of a run. It invariably ended in my finding myself sitting back in a rickshaw, feeling as if I had not a care in the world, smoothly and noiselessly gliding along up hill and down dale, miles away, with the weird moonlight flitting across the paths and playing among the thick leafy glades on either side. I think I have never experienced anything so soothing, or a temperature more ideally perfect

than these impromptu rides in this beautiful spot of Ceylon's spice-laden isle.—T. A. CARNEGIE-CHEALES.

DISBUDDING VINES.

To the Grape grower who, in addition to being a good practical gardener, has also the necessary amount of enthusiasm to make his work enjoyable, the closing days of winter are interesting times. The rain may come down in a deluge, and the wind roar and whirl in fitful fury; what matters, these will only have sway for a time; spring is at hand, when old Sol begins to assert his power and awaken all Nature into active life. The Grape grower is, perhaps, the first to note and welcome the signs of spring, for the lengthening days and pleasant spells of sunshine act like magic upon early forced Vines, tending as they do to promote rapid growth, as well as to give substance and colour to the leaves.

The buds in successional houses will now be breaking fast where a little fire heat is employed to forward them, and ere long Vines in late houses will also be bursting into leaf. Disbudding, stopping, and tying will therefore be the order of the day for some months hence, and although the work is simple enough, it is quite easy to make errors in carrying it out. A mistake often made is to treat all Vines alike in the matter of disbudding, without paying due regard to the style of pruning adopted or the type of shoots produced. Let us therefore consider the treatment best suited for Vines of various descriptions.

Young Vines which are not required to produce large bunches of Grapes are usually pruned to one bud, and a good practice it is, because compact bunches are thus secured. In this case there is, of course, little choice in the matter of shoots, as each spur produces one strong one, and generally a few weak ones around it; the latter should be rubbed off as soon as they begin to burst. In cases where the Vines are pruned to two eyes the two best shoots ought to be retained for a time, as it often happens that the shoot at the extremity of the spur produces several joints before the bunch shows, while the shoot from the basal bud sends out its bunch quite near the rod. This is usually the better one to retain, unless a large bunch is required, but generally speaking the bunches which show at some distance from the main rod are loose in the shoulders and long in the footstalk, characteristics not valued by good Grape growers.

As soon as the character of each bunch can be discerned the selection ought to be made and the superfluous ones removed. Young Vines which made their rods last season must be carefully disbudded, as upon the selection now made will depend the ultimate positions of the spurs. The buds retained should be as evenly placed as possible from 15 to 18 inches apart on each side of the rod, so that a shoot on one side is disposed midway between two on the other. It is not always easy to secure growths at just the right point, but the nearer the plan is adhered to the better, even though in a few instances a comparatively weak shoot has to be retained in preference to a stronger, but misplaced one.

Now let us deal with Vines pruned on the long-spur system—i.e., leaving the growths from 6 inches to a foot or more in length, we thus get plenty of good shoots to select from. The one carrying the best and most shapely bunch should be here retained, no matter where it is situated; but—and this is important—a shoot must also be retained at the base of the spur. The latter, if stopped at four or five leaves will form a moderately strong growth, and at pruning time the following year some of the spurs can be cut back to such shoots. With this treatment large bunches of Grapes are obtained, and long spurs may at any time be removed. The principle is in reality exactly the same as that adopted in the disbudding and pruning of Peach trees. Muscats, Gros Guillaume, and Madresfield Court are varieties which succeed well under this system.

The advantage of having plenty of young wood on old Vines at pruning time has many times been advocated in the *Journal of Horticulture*, but hand in hand with that practice must go judicious disbudding if the Vines are to derive the fullest benefit. In such instances it is not advisable to do the whole of the disbudding at one time; a little extra growth for a time will help to increase root action, and put new vigour into feeble veterans. Only the weak buds must be removed at first, allowing the other shoots to remain till they are 3 or 4 inches in length; the most promising can then be selected, and the others removed by degrees, always retaining a growth near the base of the spur whenever opportunity occurs.

Overcrowding should of course at all times be avoided, but it is well to bear in mind that very old Vines do not often produce strong shoots, and enough ought to be left to completely cover the available space, as every leaf of good texture means increase of force in the Vine. When it is intended to take up young rods a sharp look out must be kept at disbudding time for well placed shoots at the front of the house. It is an easy matter to overlook this till the growths are tied down, then it is found that just the one required has been removed.—H. D.

THE SHERWOOD CUP.

IT having been represented to the Council of the Royal Horticultural Society that the terms in which the Sherwood cup is offered for competition on page 52 of the Society's Arrangements for 1899 are not sufficiently definite, the following additional regulations are made:—

1. No exhibitor may stage more than 100 dishes in all.
2. The 100 (or less) dishes may be divided between the two meetings in any proportion the exhibitor pleases.
3. Special regard will be given to quality and to variety.
4. As with all other exhibits for prizes, all the exhibits must have been actually grown by the exhibitor in his own or his employer's garden.—W. WILKS, *Secretary*.

By order of Council, February 14th, 1899.

WINTER PRUNING.

A NOVEL COMPETITION.

SOME fifteen or more years ago, the late Earl Beauchamp, with a view to the encouragement of the hardy fruit growing industry on the estate and the improvement of the property, decided to set apart a few acres of land for the raising in quantity of hardy fruit trees. These were proved to be the most suitable for the locality, and then distributed gratuitously to his tenantry, both small and great. The number of trees thus disposed of varied from 1000 to 2000 trees per annum.

It will thus be understood that this increased area of young orcharding meant some attention in the shape of pruning. Here began the difficulty, for outside the garden proper a workman sufficiently skilled could not be found; and as for the conceited jobbing gardener, his services were obviously worse, if judged by the work one sees him do in suburban gardens. It will thus be seen that the art of pruning in our rural districts is nearly defunct, and, as a matter of fact, our old orchards are living demonstrations of the truth of this.

In order to improve this state of things with other similar deficiencies, a club or society was formed some half-dozen years ago, having for its object the encouragement and improvement of labour in our rural districts by spreading technical instruction from various experts. The Club was fortunate in obtaining the services of the present Lord Beauchamp for its president—a nobleman who occupies a seat as a Progressive member of the London School Board, and who takes the deepest interest in technical education of all kinds, and who was consequently able to bring considerable tact and experience to bear upon the organisation at every opportunity. At first the Club's funds only were available for providing a series of lectures and demonstrations, held in the orchards by myself, but of late years the County Council have made grants in assistance thereof.

Amongst other competitions of this year a pruning exhibition was arranged, and which, if taken as a test value of the instruction, has certainly proved a signal success, and extremely encouraging towards the continuance of the experiment. The competition took place on February 16th in a 10 acre orchard of young flourishing trees about ten years planted. The farm having been in hand the trees had hitherto received fair attention. Two classes were arranged. Class A for farm hands only, and class B open for all; 20s., 10s., 5s. were offered in each class. The conditions ran:—To the person who shall prune with knife, saw, chisel, or other suitable tool, in not more than three hours, four young trees in the best manner; time also will be considered. Unsuccessful competitors to receive 1s. each.

The trees were previously selected as nearly equal in all respects as possible by an appointed steward; two Apple and two Pear trees for each competitor, with numbered cards attached in consecutive order. Corresponding cards were prepared and kept for balloting purposes.

Sixteen competitors answered the roll call. The ballot took place, each competitor drawing a card from the steward's hands, which identified his list of trees. At a given signal the work commenced, and as soon as each competitor finished he returned his number to the steward, who was stationed ready to receive it and register the time; the card, with the time stated on, being afterwards handed to the Judges for point value. The Judges—Messrs. Coleman of Eastnor, and Waid of Stoke Edith—carefully watched the progress of the work, and summed up the points at the competition.

Various styles were adopted, and the old primitive chisel was used in one case. The general character of the work was above average merit, and extra prizes were awarded in each class. Some of the competitors were in too great a hurry to make neat skilful work, while others failed to smooth saw cuts. One of the most gratifying features was that nearly all the prizes were awarded to comparatively

young men, who had followed closely to the instructions given at the demonstrations and lectures.

The event created the greatest interest and enthusiasm within the radius of the Club, and a goodly number of anxious spectators watched the proceedings throughout, and patiently waited to hear the results. After so successful an experiment doubtless the competition will be repeated and extended.—W. CRUMP, *Madresfield*.

THE BEST PEACHES.

BY way of response to "H. D." (page 119), in reference to the conditions most favourable to the successful cultivation of that exquisite Peach Noblesse, I beg to say that, in my own practice, I was never able to produce it in such perfection as at Archerfield, in East Lothian. The soil and water at that place were so strongly impregnated with lime that neither Camellias, Heaths, Rhododendrons, nor other hairy rooted plants would live in it. The Camellia, of course, is not a hairy rooted plant, but it did no good under the lime influence.

The Peaches did remarkably well, and especially Noblesse, and seemed to be in a most congenial element. It bore freely, and brought to maturity much finer fruit than I have ever seen it produce in any other district. Perhaps these remarks will come under the eye of someone who may remember the collection of fruit I put up for "The Gardeners' Chronicle" prize at the Great International Fruit Show in Edinburgh in 1865, in which collection there was a dish of this Peach that one of your contemporaries described as absolutely perfect.

The soil of the place referred to produces all Peaches in very fine form, and Noblesse in particular. This leads to the suggestion that it is questionable if Peaches in general get as much lime as is good for them.

With regard to the varieties "H. D." recommends little or no fault can be found. Violette Hâtive and Bellegarde are two old varieties that may be said to be almost faultless, and the same may be said of Royal George where it is not given to mildew. Where it is any trouble in this respect Dymond is a splendid substitute. Even where Royal George succeeds Dymond is worthy of a place. It is equal in cropping freely, of fine flavour, and larger.

Alexandra Noblesse is a grand second early Peach producing large handsome Noblesse-like fruits of good quality. It is rather a shy bearer when in a late cool house, and is inclined to grow strongly, calling for periodical lifting.

Raymaekers is also a fine second early variety producing very large fruits, in other respects having a strong resemblance to Noblesse, but considerably larger.

I can endorse all "H. D." says of Sea Eagle as a late variety. It is a most fertile variety, and one of the few that can be kept in the fruit room in good condition. This and the old Walburton Admirable are two fine late varieties; the latter, however, is not so free as Sea Eagle.—D. THOMSON.

PHYSIANTHUS ALBENS.

THE white Bladder-Bloom is a member of the *Asclepias* family, and was first described by Van Martius in his work on Brazilian plants, from specimens which that botanist collected in the woods of Ypanema in the province of St. Paul's. Seeds were sent to this country in 1830 by Mr. Tweedie of Buenos Ayres, and the plants produced flowered freely in 1831, from which an illustration was prepared for the "Botanical Magazine" (t. 3201, 1832). A few years after examples of the same plant were sent to Mr. Lindley, then Editor of the "Botanical Register," with the statement that they had been received from Mexico apparently in mistake, as was explained when the flowers were figured in the work named (t. 1759, 1836). In Decandolle's "Prodromus," vol. viii., page 533, this *Physianthus* is referred to the genus *Arauja*, which has been adopted by several authors since, with it being associated *A. sericea* (formerly known as *Apocynum Peruvianum*), *A. calycina*, and *A. angustifolia*, all natives of Brazil or neighbouring districts.

In cultivation the *Physianthus* has always been scarce, being confined to botanic gardens or a few private gardens where curiosities are prized. This is probably due to the fact that it cannot claim a prominent place on account of its beauty, though the white flowers possess a powerful fragrance, and when the plant is bearing its large twin fruits (fig. 30) it is very remarkable. Like many of its relatives it is of twining habit, producing the white flowers in small stalked clusters (usually four each) from near the axils of the opposite bright green leaves. Before the corollas expand they have a curious inflated appearance, and to this it owes the generic name, popularly rendered "Bladder-Bloom." The fruits are rarely

produced under cultivation, and in the figures we have cited, which are the only ones known to us, this most characteristic feature is omitted from the absence of materials. When mature the fruit measures about

is then very ornamental. It is probable that by artificial fertilisation these fruits could be more frequently obtained on cultivated plants, but, as with other *Asclepiads*, the method of fertilisation is strangely different



FIG. 31.—THE WHITE BLADDER-BLOOM, *PHYSIANTHUS ALBENS*.

8 inches from tip to tip of the two lobes, but occasionally only one of these is produced or becomes fully developed. The surface is curiously wrinkled or puckered, and when ripe it assumes a rich orange colour, and

from most plants, and a good idea of the arrangement of the organs can be obtained from a careful examination of one of our common hardy *Asclepias*.



THE HISTORY OF THE ROSE.

At the last fortnightly meeting of the Devon and Exeter Gardeners' Association, an instructive paper, prepared by Mr. E. J. Love, of the Mount Radford Nurseries, was read, entitled "The History of the Rose." The earliest records of cultivation of the "Queen of Flowers" took them, he said, back to the days of ancient Greece and Rome. Theory justified them in assuming that the Rose came from the central or western central part of Asia. That the Greeks used the Rose for personal embellishment there could be little doubt; they were lavish in its use at their public festivities and religious ceremonies, not only dedicating it to their gods and goddesses, but investing it with many supposed medicinal virtues.

During the days of the Roman Empire the Rose occupied a high position, and many districts became famous for their Rose gardens. Of the colour of their Roses they only knew red and white. So far as substance of petal and solidity of bloom were concerned they could only conjecture; but they must have attained a much higher state of perfection than would have been imagined so long ago. From the fourth to the sixteenth century scarcely anything was known of the Rose as a cultivated plant.

The coming of the Rose into England took place about the beginning of the sixteenth century. In 1629 they were told that there were twenty-four varieties, in 1730 forty-three, and in 1770 seventy-nine. The Moss Rose was introduced from Holland in 1596, the Austrian Briar came the same year, the Rosa multiflora in 1801, the China Rose in 1789, and from the Celestial Empire in 1810 came the first Tea Roses. Looking back over a period of 2000 years, he ventured to say that never before, not even in Rome's palmy days or in the zenith of Grecian glory, had the Queen of Flowers such devoted and loyal subjects as to-day.

Lord Penzance's charming Sweet Briar was the most notable addition to their Rose gardens of late years, but he was afraid that although a "thing of beauty" it would not be a "joy for ever." He thought it was a trait in their national character that beauty alone did not permanently attract them. He looked more to the Tea and Hybrid Perpetual section to maintain the high position attained by the "Queen of Flowers."

Mr. W. Mackay occupied the chair. Owing to the very bad weather the attendance was small. A vote of thanks to the lecturer and the Chairman was passed after a rather interesting discussion.—"Devon and Exeter Gazette."

DECORATING FRUIT EXHIBITS.

MR. JEFFERY, on page 82, suggests as a defining line between collections of fruit the introduction of epergnes and vases of flowers, which he thinks would convey a striking decorative effect to the fruit tables. If it were practicable to afford the space needed to the flower and fruit exhibition separately for staging no doubt the imaginative picture drawn by your correspondent would be an effective one. In actual practice, however, there would arise some friction between the two sections, because, unless special facilities were provided, one would get very much in the way of and prove a hindrance to the other. Those who have had a long course of experience at exhibitions will readily admit this difficulty, while it may be just as truly said the idea of placing the floral decoration exhibits between those from fruit growers would make a novel and very pretty blend.

The two objects, however, are widely separated, and as a rule the owner of the one has not a prominent sympathy with the other, and this, I feel certain, would not be mutually strengthened by bringing the two in conflict one with the other. The grower who had fine Grapes to stage would feel nervous in having so close an association with the epergne dresser, and *vice versa*. The only satisfactory method of dealing with the suggestion is for societies to find separate tables for the florists' use, with the spaces so arranged that they can stand the vases in their places after the fruit is staged, and the solution of such a difficulty is easier of imagination than is the actual carrying out of the work in the show tent. There are few flower shows where the officials do not find a difficulty in dealing with entries on the morning of the show, and these would be still further added to if the limit of time allowed were hindered by the introduction of epergnes and vases.

I quite agree with Mr. Jeffery, as will many other readers and exhibitors, that much confusion exists in the arrangement of the fruit collections at some shows, and often without any real necessity. It is not unusual to see these classes huddled together at one end of the fruit tables, and the other end scantily filled, from no other reason than that no estimation of space is made relative to the number of entries. Unlike Chrysanthemum shows, there are no rules as to the size of the Grape stands, which usually govern the extent of space required for fruit

collections, and it is this uncertainty alone in regard to space required that invariably accounts for the crowding and confusion that exist, when each exhibitor is given an equally measured space.

A collection of fruit is usually looked upon as the most important class, but due regard is not always paid to its position and arrangement; the matter of a few inches in the space required is frequently made a cause for unnecessary friction. The difficulty of defining between exhibits could be easily decided by having wide strips of coloured materials left unfastened until the space for each collection is determined, and if each exhibitor was expected to furnish the amount of space required for the Grape stands, officials would then be in possession of the necessary information for measuring the spaces. This is solicited by some societies in their schedule, but I have never heard of a case where disqualification followed the non-observance of the rule. If such materials were provided as that suggested, and instructions given to exhibitors on the show day to the effect that they were intended as a dividing line, it would be very simple for the definition to be clearly proved, for the information equally of judges, exhibitors, and the patrons of the society.

Personally, I believe it would be better to allow the decorative aspects of the fruit tables to remain in the hands of those who stage them, no great effort, or large quantity of material is required to give a pretty turnish to collections of fruit. It must be admitted that occasions are not so frequent as they might be where effective decoration is applied to fruit collections, and which I think lend themselves very readily to such treatment. Some fruit growers consider decorations beyond leaves for plates absolutely superfluous. This, however, is strictly a matter of opinion, and will always remain so between adherents of the practice and those who look upon it with disfavour. Trails of green or coloured Virginian Creeper of the small-leaved kinds, Smilax, Lygodium scandens, fronds of Lycopodiums or Maidenhair Ferns, can all be adapted to the purpose. W. S., Road Ashton, Wilts.

COVENT GARDEN MARKET.

TOWN *versus* COUNTRY GROWERS.

LITIGATION has arisen between a number of market gardeners growing fruit, flowers, vegetables, roots and herbs in the neighbourhood of London, for sale in Covent Garden Market, and the lord of the market, the Duke of Bedford. His Grace owns the market under letters patent granted by Charles II. A private Act of Parliament was passed in 1828, regulating the market and fixing tolls to be charged to "growers" frequenting it and occupying the stands with their waggons or carts for the purpose of selling their goods. The plaintiffs have brought their action for the purpose of claiming a declaration that they have statutory preferential right to hire three classes of stands—viz., the casual cart stands, yearly cart stands, and yearly pitching stands. They allege that the duke had been excluding them, and refusing them these stands, even when vacant, or filling the stands with other than growers so as to prevent growers having the use of them, with the result that the plaintiffs have had to go to other stands or to places outside the market, where the conditions imposed by the Act do not apply, and higher tolls are exacted.

To all this the Duke of Bedford replies with the contention that the stands were intended to be available for growers throughout the country, and that this action is a scheme by which the growers round London who cart their produce to market seek to get possession of the thirty-eight casual cart-stands, so as to exclude all the growers who send their goods up by train. The case has not yet reached the trial of these interesting issues, in which the public have concern as well as the growers and the ducal owner. At present the action has reached only a preliminary stage—viz., the legal right of the six plaintiffs (who are market gardeners) to join together in bringing one representative action on behalf of the whole class of growers. The duke raised this point by taking out a summons to have all proceedings in the action stayed on the ground that the plaintiffs having separate and distinct causes of action could not, as private individuals, sue on behalf of a class of the public in respect of public or statutory rights. Mr. Justice Romer decided in the duke's favour, and plaintiffs appealed.

The Master of the Rolls and Lords Justices Rigby and Vaughan Williams delivered judgments on the appeal on Tuesday. The Master of the Rolls said that if he could come to the conclusion that the action was frivolous and that the growers had not any rights at all either against the public or against the Lord of the market, it would follow that the action was in his opinion misconceived; but he could not come to the conclusion that there was nothing honestly to try in the controversy. When the Market Act was passed London was supplied with fruit and vegetables by the market gardeners round about; but now growers sent their produce from Cornwall, Scotland, Ireland, and even from California; and as to what "growers" as referred to in the Act now meant he said nothing. But he found that "growers" had certain statutory rights, and the right which the plaintiffs claimed was a statutory preferential right over three classes of stands. If, as they said, all their preferential rights were ignored, he could not see why that question could not be raised in one action instead of three. In his view, therefore, the appeal must be allowed. Lord Justice Rigby was also of opinion that the case was a proper one for a representative action by one or more growers. Lord Justice Vaughan Williams arrived at a different conclusion. He thought that the judgment of Mr. Justice Romer was perfectly right.

In accordance with the judgment of the majority of the Court, the appeal was allowed and the order of the Court below discharged, upon the undertaking of the plaintiffs to make the Attorney-General, as representing the general public, a defendant.—("Daily Mail.")



CYPRIPEDIUM ORION.

ONCE again the great firm of Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, has sent forth a new *Cypripedium* that deserved recognition and got it in the form of an award of merit from the Orchid Committee of the Royal Horticultural Society on the 14th inst. *C. Orion* (fig. 31) is a hybrid that resulted from a cross between *C. concolor* and *C. insigne*, and it is of chaste beauty. The ground colour is cream throughout, deeper in the dorsal sepal and flushed with rose in the petals. The spots over all are crimson, but large on the dorsal sepal and minute on the pouch. The flowers measured $3\frac{1}{2}$ inches across, and partake largely of the character of *C. insigne*, the foliage favouring *C. concolor*.

LÆLIA ANCEPS.

THIS most useful and beautiful winter flowering Orchid will by now have passed out of flower, and will perhaps need attention, either by top-dressing or putting into larger receptacles. After the removal of the spikes, the plant should be allowed to become gradually dry, and be kept on the dry side till young roots are observed to be pushing, when those that require larger pans or baskets (pans I prefer) should at once be attended to, also those that need top-dressing or re-surfacing.

As these plants require when in active growth a large quantity of water, the drainage must be perfect. I have found peat fibre, with all the fine particles taken out, and the same quantity of living sphagnum moss, with some pieces of soft brick about the size of walnuts added, to answer admirably for them. After being potted or re-surfaced, the plants should have no water till the roots are in active growth; a syringing between the pots, pans, or baskets will be quite sufficient to prevent shrivelling.

Lælia anceps succeeds in an ordinary intermediate house, or even a warm greenhouse, where an abundance of light and air can be afforded. When in active growth too much water can hardly be given, but during the time of rest a small quantity will suffice. The plants will stand a fair amount of sunshine, some people in fact using little shading, but I am of the opinion that it is advisable to prevent scorching and to keep the foliage in good condition.

Beautiful as is the typical flower, the most attractive are the white varieties, which when they become thoroughly established and strong are quite as free flowering as the type, as a plant of *L. a. Sanderiana* before me with eight spikes and thirty-two flowers testifies. The most beautiful of the white varieties are the true form of *Dawsoni*, *Amesiana*, *Sanderiana*, *Schröderiana*, *Stella*, *Williamsi*, and *Virginalis*. No plant is more interesting or produces flowers at a more useful time, or will better repay the time devoted to its culture.—J. BARKER, *Hessle*.

ONCIDIUM PECTORALE.

THIS is one of the most charming of the Brazilian *Oncidiums*, and it is a pity it is not more plentiful. The pretty spreading panicles of golden yellow and chestnut brown flowers appear in the middle of winter, and last a long time in perfect condition. The habit is rather dwarf, and it should be grown on trellis rafters in shallow baskets without too much compost about the roots. Although introduced many years ago the number of plants in cultivation has never been large; indeed, it was for many years practically lost to cultivation.

ONCIDIUM CHEIROPHORUM.

There are few prettier winter-flowering *Oncidiums* than this, and when well grown it is also one of the most free-flowering. The habit of the plant is tufted, the pseudo-bulbs small, and the flower spikes grow usually less than a foot high. The individual blossoms are about half an inch across, bright yellow with a paler coloured lip, and a large number of these are produced on a spike. The plants being so small, large pots or baskets are plainly unsuitable for them, for they could never produce roots in sufficient strength or number to push through the amount of compost needed. Many growers make this mistake of giving too much room to these small-growing kinds.

What they require is small pans with only an inch or two around the plant, while small specimens must not be separately potted, but simply massed and given suitable sized receptacles. In this way one prominent Orchid grower at least succeeds well with it, fine plants so grown being often exhibited by him. It is necessary to avoid thickening the compost unduly in this mode of culture, but it makes most beautiful little specimens where they do well. The slightly larger surface of the compost conduces to a more regular state as regards moisture, and thus the little roots are protected in a measure from

rapid fluctuations. The ordinary compost, consisting of about equal parts of peat fibre and sphagnum moss, with ample drainage, and a few small bits of charcoal and crocks, suits it admirably.

Coming from considerable elevation in its native place, *O. cheiroporum* likes during summer a cool airy structure, where ample moisture is present, and the heads are shaded from bright sunlight. During winter the house ought not to fall below 50° or thereabouts, this as a matter of fact being low enough even for the coolest Orchids, though in the majority of places they are kept cooler. In summer, of course, they cannot be kept too cool; in winter they must be brought right up to the glass, so that every ray of light during the dull sunless days reaches them.

Watering is necessary all the year round, for though towards late winter and early spring not much growth will be going on, the tiny bulbs must not be dried, or they soon shrivel, and the growths springing from their bases will be weak and spindly. It will be noted by the above that no special difficulty will be found in the culture of this pretty *Oncidium*, but all the season through unremitting care



FIG. 31.—CYPRIPEDIUM ORION.

to the details as they become necessary. Insects are not often troublesome, except in collections where other and dirty plants are kept in its vicinity; here scab may put in appearance, and thrips damage the young growth, but these will be got rid of by the usual means.—H. R. R.

— NITRATE OF SODA.—As a forcing food for the foliage parts of plants nitrate of soda does not stand in any need of an advocate to day. Mons. Paul Vincéy, Professor of Agriculture for the Department of the Seine, France, publishes the following as the results of his experiments:—The amount of nitrate of soda to be employed to the square mètre (39 square inches) is about 30 grammes if treating with such crops as Cabbage, 25 grammes for Potatoes, Carrots, and Lettuces. Nitrate of soda should not be mixed with manure, but be spread on the surface of the land to be harrowed in. Select for the application an occasion shortly before rain, or apply just before watering; but at the time of application care must be observed that the plants have not become wet in any way, because the fertiliser falling on the wet surfaces of the leaves burns them. Care must be taken not to give a larger dose than that indicated above, as an excess will act as a poison in plants. Nitrate of soda is often adulterated, for which the following tests are recommended. First, place a small quantity of the nitrate of soda in an iron cup and put that over the fire. If the sample is pure it will melt slowly and quietly in five minutes, commencing five minutes later to boil, emitting a bluish flame. If the nitrate contains any chloride of sodium or chloride of potassium mixed with other salts there will be a crackling and spluttering while on the fire. The second test is, half fill a drinking glass with nitrate of soda; fill the vessel with rain water and agitate or stir with a wooden spoon. The mass will be dissolved in a few minutes. If a few drops of a concentrated solution of nitrate of silver are now put in the liquor should become cloudy, resembling soapy water; but if a white precipitate is formed resembling curdled milk there is adulteration.—("American Gardening.")

ROYAL GARDENERS' ORPHAN FUND.

THE meeting at Anderton's Hotel on Friday afternoon last, when the subjoined report and balance-sheet were presented, was a comparatively large one. The work, under the presidency of Mr. W. Marshall, proceeded smoothly and satisfactorily. Amongst the best known participants in the meeting were Dr. Maxwell T. Masters (who unhappily does not yet look well), and Messrs. H. J. Veitch, W. Roupell, G. Assbee, H. J. Jones, C. Osman, R. Dean, A. Dean, H. B. May, G. Gordon, P. R. Barr, A. Outram, W. Denning, H. J. Cutbush, T. Lyne, W. H. Divers, W. Bates, G. J. Ingram, and J. Smith.

After reading the notice convening the meeting and other formal observances, the following report and balance-sheet, which were distributed to the members several days ago, were taken as read.

ANNUAL REPORT FOR 1898.

At the close of the eleventh year since the institution of the Fund your Committee are enabled to announce that it is gratifying to find that there is an increase in the annual subscriptions, though the Committee are compelled to admit that they have not hitherto received that measure of support from the gardeners of the kingdom that they had hoped for in the early days of the Fund. The financial support received has largely been derived from sources the existence of which was scarcely contemplated at the outset, such as receipts from the sales of flowers at horticultural exhibitions, the opening of gardens and plant houses to the public, concerts, &c. Gardeners' societies in particular have given a generous measure of support, which materially assisted the Committee in administering relief to the fatherless, when it was most urgently needed. In view of the number of applicants for the benefits of the Fund, your Committee do most earnestly appeal for the sympathy and support of the entire gardening community, and especially to that section of it for whose orphan children the assistance afforded by the Fund is solely intended.

There are now sixty-eight children receiving the benefits of the Fund, in addition to those to be elected this day. Most gratifying assurances are constantly being received from the mothers of orphan children, to the effect that the assistance rendered during the time the child was on the Fund proved of unspeakable advantage to many a struggling widow; and not less satisfactory has been the testimony borne to the timely and valuable aid rendered to some orphans in giving them a start in life after they had ceased to be chargeable to the Fund.

The total number of children who have been placed on the Fund

CASH STATEMENT FOR THE YEAR ENDING 31st DECEMBER, 1898.

RECEIPTS.			
To Balance from last Account	...	...	£935 17 3
„ Subscriptions, General	...	...	£282 9 6
„ Ditto Collected by Local Secs.	...	...	79 16 0
			362 5 6
„ Donations, General	...	...	148 2 7
„ Ditto Collected by Local Secs.	...	...	64 8 9
			212 11 4
„ The Emma Sherwood Memorial	...	...	13 0 0
„ Annual Dinner	...	...	557 10 0
„ Card Collection	...	...	29 5 2
„ Advertisements in Lists of Subscribers	...	...	28 9 0
„ Dividends on Stock and Interest on Deposit	...	...	266 13 8
			£2405 11 11

NOTE.—INVESTMENTS:

2½ per cent. Consols	...	...	£7070 6 10
3 „ Canada Stock	...	...	2000 0 0
L. & N.W. Railway Pref. Stock	...	...	340 0 0
Thomson Memorial Trust:			
East India Railway B. Annuity of £14 (cost)	...	...	430 11 0

Having inspected the Securities and examined the Books and Vouchers supplied to us, we hereby certify the above Account to be correct.

Dated January 21st, 1899.

The Chairman, in moving the adoption of the report and balance-sheet, was very brief indeed, as he considered that nothing remained for explanation. He commented, however, on the fact that gardeners, for whom the Charity was instituted, gave such surprisingly poor support, and considered they ought to do a very great deal more. Mr. G. Assbee seconded the motion, which was carried unanimously.

After the election of Treasurer, Auditor, and Committee, Mr. W. Marshall, on behalf of the Executive Committee, proposed Mr. Brian Wynne as Secretary, in succession to Mr. A. F. Barron, whose health compelled his resignation. Mr. R. Dean was the seconder, and there was not a dissentient voice—a fact that must be gratifying to Mr. Wynne, whose knowledge of the Fund and ability make him admirably suited to the position.

Mr. Harry J. Veitch then rose to propose a vote of thanks to Mr. A. F. Barron for his services since the inception of the Fund. He referred to his assiduous attention to duty from the commencement until now, and considered that the success that had been achieved must be largely accredited to Mr. Barron. He spoke of the general regret at the enforced retirement, and trusted that the benefit from the rest would assist recuperation, and that he would long be spared to assist the Fund with his experienced advice as a member of the Executive Committee. He

since its foundation is 103, and the total amount paid to the orphans is £6836 15s. Special grants in aid have been made this year to the amount of £18 5s.

The annual festival took place at the Hotel Métropole in April last, and the Committee were fortunate in securing the valued services of Charles E. Keyser, Esq., Aldermaston Court, Reading, High Sheriff of Berkshire, as their Chairman, whose forcible appeal in aid of the Fund assisted in realising the sum of £557 11s.

Your Committee have great pleasure in placing on record their high sense of the important services rendered to the Fund by the Treasurer, N. N. Sherwood, Esq., whose generous support of the charitable institutions connected with horticulture is so keenly appreciated by the whole gardening community; and they gave hearty thanks to their Auditors, Messrs. Martin Rowan and P. Rudolph Barr, for bestowing so much attention in auditing the accounts. Mr. Barr is the retiring Auditor, and is nominated by your Committee for re-election.

By the death of Baron Ferdinand de Rothschild the Fund loses one of its Vice-Presidents, and a generous supporter for several years past. The Committee recommend that C. E. Keyser, Esq., be this day elected a Vice-President to fill the vacancy.

It is with great regret that your Committee have to announce the retirement of Mr. A. F. Barron from the post of Secretary to the Fund through failing health. As one of the chief promoters of the Fund and its Secretary since its establishment, Mr. Barron has done much to further its interests, and merits the best thanks of all interested in gardeners and gardening; and in consenting to be nominated for election as a member of the Executive Committee Mr. Barron proves his devotion to the Fund, and his ready willingness to continue to afford assistance in carrying on the good work. The Committee unanimously express their sympathy with Mr. Barron, and their best wishes for his improved health and well-being.

Mr. G. W. Cummins has resigned his seat on the Committee, and Mr. T. Peed, Roupell Park Nurseries, S.E., has been elected to succeed him. The members of Committee who retire by rotation are Messrs. Cutbush, Laing, Lyne, Nicholson, Osman, Poupert, Smith, and Walker. These, with the exception of Messrs. Nicholson, Smith, and Laing, being eligible, offer themselves for re-election. The Committee nominate Messrs. A. F. Barron, Chiswick; J. Cheal, Crawley; and W. Howe, Park Hill Gardens, Streatham, for election this day.

The Committee, having advertised for a Secretary, have considered the numerous applications, and recommend Mr. Brian Wynne for election at a salary of £100 per annum.

EXPENDITURE.			
By Allowances to Orphans	...	...	£898 5 0
„ Emma Sherwood Memorial	...	...	15 0 0
„ Grants in Aid...	...	...	18 5 0
			£929 10 0
„ Annual Dinner	...	...	134 16 1
„ Secretary's Salary	...	...	105 0 0
„ Printing and Posting Subscribers' Lists...	...	...	29 17 0
„ Printing and Stationery	...	...	£13 11 9
„ Annual General Meeting, Audit, &c.	...	...	9 6 11
„ Hire of Room for Committee Meetings	...	...	2 2 6
„ Postages	...	...	15 0 10
„ Bank Charges	...	...	1 18 8
„ Sundry Expenses (Petty Cash)	...	...	6 10 0
			£48 10 2
„ Purchase of £340 L. & N.W. Railway 4 per cent. Preference Stock...	...	...	499 5 3
„ Balance—			
Cash at Bank	...	...	£558 10 11
Cash in Hand	...	...	0 2 6
Cash on Deposit	...	...	100 0 0
			£658 13 5
			£2405 11 11

(Signed) P. RUDOLPH BARR, } Auditors.
M. ROWAN.

proposed that an address be engrossed on vellum, and be presented to Mr. Barron, which, with the vote of thanks, after being seconded by Dr. M. T. Masters, was carried with acclamation.

The ballot for the election of pensioners resulted in the following being elected:—Alice Gilhorne Seaton, 375; Muriel Gutteridge, 373; Daisy Agnes Spong, 282; John Henry Donaldson, 256; James Henry Tanton, 250; Helen Macdonald Milne, 217; Isabella Emma French, 205; Vanda Mary Bartlett, 200; and Harry John Mason, 195. The unsuccessful candidates were Arthur George Wood, 190; Hilda Kathleen Mary Rogers, 189; Winitred Moxham, 160; Aaron Hall, 91; Arthur Gregory Stephenson, 65; Edward White, 63; John Baird, 41; and William Ernest French, 11. Two others, James and Eugenia Seegar, have left the country, and are thus placed beyond the benefit of the Charity.

The Executive Committee recommended that Rule v. should be altered to read:—

Line four, after the word "purpose," omit the words "All donations and legacies," and insert the following:—"All receipts, except legacies and donations specially given as such for investment, shall be considered as subscriptions, and be available for current expenditure. All legacies and special donations."

Rule xi. was also proposed to be altered as follows :—

Line five, after the word "require," make the following addition :—

"Not more than two children of the same family can be in receipt of the benefit of the Fund at the same time."

Both these propositions, after being duly seconded, were carried unanimously.

Now that the annual general meeting of this Fund is over, the new Secretary has been unanimously elected, the old one properly and warmly thanked, as well as put on to the Committee, and the election of nine children is over, it is to be hoped that there will be seen during the ensuing year a very great revival of interest in the Fund, and that we may see during that time an increase of some 500 gardener subscribers at least, for it is little less than a scandal that the gardeners of the kingdom, in whose interest specially the Fund was started, support it so indifferently. When it becomes a case of comparative indifference or "don't caredness," those who have been other than gardener subscribers naturally ask whether it is worth while to maintain the Fund longer. It was a deplorable fact that of nineteen children nominated for election this year, not in one case had the deceased father been a subscriber, even of so small a sum as 5s. per annum.

To what is this indifference on the part of gardeners due? Can anyone explain it? Will any who are discontented even anonymously tell plainly the reasons why they refuse to become subscribers? It would help so much to the desired end were complaints or difficulties, if such exist, made fully known. At the recent election out of nineteen children nominated two (German), having left the country, became ineligible, and one other was rendered such by the passing of the amendment to Rule xi, which now invalidates the nomination of any third child of the same family. Thus, the nominations being reduced to sixteen, and nine were elected, it is seen that only seven failed, and probably all these will be elected next year, as their present votes count then. —A. D.

THE HISTORY OF THE PELARGONIUM.

THE history of the Pelargonium is most interesting, and many readers of the *Journal of Horticulture* may be unfamiliar with it. A correspondent, "G. H. W.," asks us to give this history in brief. We think, however, both for his and other readers' benefit, we cannot do better than to give the text of a lecture on the subject that was delivered before the Royal Horticultural Society by the late Mr. Shirley Hibberd in 1880.

The Pelargonium affords a subject large enough to occupy as many hours, days, or even weeks, as the mere moments I shall devote to it on the present occasion. It is fortunate I am not bound to mention Geraniums, for, if they are of less importance than Pelargoniums they take us further back in time, and to do justice to them we should have to rummage amongst the old books and fish up some very curious memoranda. But the mention of the Geranium renders it necessary to begin with definitions. A Pelargonium is not a Geranium, although often so called. The true Geraniums are for the most part herbaceous plants inhabiting the northern hemisphere, and the Pelargoniums are for the most part shrubby or sub-shrubby plants of the southern hemisphere. Let us for a moment wander amongst the pleasant slopes of Darley Dale in Derbyshire, or by the banks of the Clyde or the Calder. We shall in either case be rewarded by seeing vast sheets of the lovely Meadow Crane's-bill, *Geranium pratense*, a true Geranium, and one of the sweetest flowers in the world. In the rocky recesses of Ashwood Dale, or on the banks of the "bonny Doon," we may chance to see in high summer a profusion of the Herb Robert, *Geranium Robertianum*, with pink flowers and purple leaves, a piece of true vegetable jewellery. And, once more, I invite you to an imaginary journey, and we will ride by rail from Furness to Whitehaven in order to behold on the railway bank, more especially near St. Bees, a wondrous display of the crimson Crane's-bill, *Geranium sanguineum*, which from July to September forms solid sheets, often of a furlong in length, of the most resplendent colour.

Now let us fly to the other side of the globe and alight in the vicinity of the Cape of Good Hope, say on the vast desert of Karroo, where there is much sand, much sunshine, and little rain. Here, in the midst of desolation, the world is rich with flowers, for the heathy scrub that occurs in patches, glowing with many bright hues, consists in part of wild Pelargoniums, which often take the form of miniature deciduous trees, although in the valleys nearer the coast, where more rain falls, they are evergreen bushes.

Very different in their characters are these two tribes of plants, and they are not less different in their constitution and aspects. We may regard the Geraniums as herbs of Europe, and the Pelargoniums as miniature trees of Africa. When we examine the flowers we find the five petals of a true Geranium of precisely the same shape and size; but the five petals of a Pelargonium are not always so, for sometimes the two topmost are the largest and stand apart from the rest. A Geranium has ten stamens, and a Pelargonium has only seven. These numbers are not constant, but the exceptions are of no consequence in a general statement of the case. When all is said that can be said about the differences and resemblances of the several families of Geraniaceæ, there remains only one constant and unfailing test of a

true Pelargonium, and that is the nectariferous tube immediately beneath the flower, and running down one side of the flower-stalk.

The best short summary of the history of the Pelargonium I have met with is in the *Gardeners' Chronicle* of October 2nd, 1841. It gave me a clue that I wanted to the first-known Pelargonium as an inmate of an English garden. It speaks of one known to Gerarde, but there is no mention of in the Gerarde of 1597. However, at page 948 of Johnson's Gerarde of 1633 is a record of a plant called *Geranium indicum*, "as of late brought into this kingdom by the industry of Mr. John Tradescant;" and the author adds, "I did see it in flower about the end of July, 1632, being the first time that it hath flowered with the owner thereof." The plant figured by Sweet as *Pelargonium filipendulifolium* (L. 85) is a variety of *Pelargonium triste*, which is identical with the Indian Geranium of Johnson's Gerarde. Thus we determine that the first flowering of a Pelargonium in this country occurred about 250 years ago.

Here it may be proper to remark that there are a few true Pelargoniums that are not natives of the Cape of Good Hope. *P. canariensis* is a native of the Canaries; *P. australe* comes from the Australian continent; *P. cotyledonis* is found wild in St. Helena; *P. Endlicherianum* is Asiatic and almost European. There are two or three species in Abyssinia. But *P. triste* is a Cape plant beyond a doubt, and it is most agreeable to know that our first Pelargonium was brought into the country by John Tradescant, of whom Parkinson speaks as that worthy, curious, and diligent searcher and preserver of all Nature's rarities and varieties. It was in all probability amongst the treasures acquired in his voyage to Barbary, in the fleet sent out against the Algerines in 1620. When, in 1629, he became gardener to Henrietta Maria, Queen of Charles I., this plant was in his famous collection at Lambeth, and was thence sent forth as the pioneer of the Pelargoniums and the Pelargonium Society. As the Cape was discovered in 1497, the plant had 123 years to complete the journey to the Mediterranean, and no doubt had the help of Portuguese traders in so doing.

It is singular that John Tradescant, who was an Englishman, born in Worcestershire, and probably of French extraction, was always regarded as a Dutchman. It is singular in this connection, because subsequent to his introduction of the first Cape Pelargonium, the Dutch were certainly the introducers of a dozen or more species that soon after came into Europe. In Dr. James Sherard's wonderful garden at Eltham there were in 1732 half a dozen species. In the second edition of Miller, published 1733, there are twenty species of African "Geraniums," and these are all Cape Pelargoniums. This brings us to the publication by Linnæus of the "Genera Plantarum" in 1737, and the "Species Plantarum" in 1753, when the twenty-five species of Pelargoniums known to him were described as Geraniums for the last time in any work of high authority. In 1787 L'Heretier distinguished them by the signs I have already mentioned. In the "Hortus Kewensis," published in 1812, as many as 102 species and hybrids are described as then in cultivation at Kew, and the list includes *triste*, *grossularoides*, *zonale*, *inquans*, *lateripes*, *peltatum*, *grandiflorum*, *quercifolium*, and *fulgidum*.

The splendid garden varieties of Pelargoniums that afford us so much delight are in a certain sense the creations of human skill. Nature never needed such things and did not trouble to produce them. They are the products of careful systematic hybridising and crossing, and they represent the talent and perseverance of the florists during a period of sixty-five years—a period so brief considering what has been accomplished that it shrinks to a moment when we compare the original wildings with the splendid flowers of to-day. In the year 1815, or thereabouts, the amateurs began to cross the species, and one of the leaders in this delightful work was Sir Richard Colt Hoare, who obtained a considerable number of beautiful hybrids. The work was taken up with more serious views by Mr. Robert Sweet, the author of a number of valuable illustrated works, comprising one in five volumes devoted to the Geraniaceæ.

The large-flowering or florists' Pelargoniums are reputed to be the offspring of *P. speciosum*. It must be evident to every cultivator of these flowers that the blood of a score or so of species is mingled in them. *P. speciosum* was introduced in 1794, but it has no place under this name in Sweet or the "Hortus Kewensis." It is variously described as producing purple and white flowers, and can scarcely be said to have a history. If the question be asked, What is *Pelargonium speciosum*? I must refer to Sweet's description of *P. involneratum*, No. 33. He there refers to *speciosum* of Andrews as identical with his own *superbum*, and he puts the *speciosum* of Willdenow out of court altogether. It is likely, I think, that *P. spectabile* (136), a hybrid raised from *P. cucullatum* and *P. ignescens*, and *P. involneratum* (33), raised from *P. cucullatum* and *P. superbum*, were the founders of the florists' race. Certain it is that these typical kinds were endowed with the capability of varying indefinitely, and with a plastic constitution rendering them possible sources of innumerable floral surprises. It is scarcely an exaggeration to say that amongst the true hybrids there are at least fifty that might be the parents of our exhibition race. But to clear up the point is impossible, for in very few instances did the early raisers keep any record that could be referred to for settling questions of pedigree.

The first variety figured as a proper florists' flower was called *Geranium grandissima*, raised by Mr. Widnall of Grantchester. The portrait of this variety appeared in the "Floricultural Cabinet" of September 1st, 1834. It was a pretty flower, with rich dark top petals and warm blush-tinted under petals; but the small size and poor form would exclude it from any collection of Pelargoniums in the present day. What a marvellous advance on this do we behold in the latest flowers of the present day.

(To be continued.)

NEW DAHLIAS OF 1898.

NEW Dahlias, like new Chrysanthemums, continue to be distributed every year, and the tendency is mainly towards the Cactus section, and many of the new varieties sent out in 1898 are of exceptional merit. One very noticeable fact is the decline of the decorative Dahlia; few new ones are sent out, and only a minimum of these are bought, although some are beautiful and most useful for cut flowers. I raised some thousands of seedlings this year, and it went against the grain to throw away so many that ten years ago would have meant a small fortune. Many of the new Cactus sorts are really decorative in habit, having fine long stiff stems that carry the flowers well above the foliage.

We are still waiting for a pure white true Cactus Dahlia, and a white Glare of the Garden. In Miss Webster I thought we had the former, and some of the flowers I have had perfectly white and fine form; still it is not the thing, and Keynes' White is not a white but a cream, and sometimes not of first-rate form, besides often coming semi-double, like Mrs. Peart. The best of the Cactus of last year, so far as I have tried them, are given below:—

Night.—Very dark maroon, good shape, free flowering, perfect habit, about 4 feet high.

Keynes' White.—Of fine form and habit, 4 feet high, and very free; the best approach to a true white Cactus Dahlia to date.

Britannia.—A charming variety with long twisted petals of a salmon pink shade, free, long stiff stems; sure to be a favourite.

Arachne.—A distinct break, reminding one of the old Maid of Kent, or W. T. Aberly. Each petal is white with a crimson edge, long pendulous stems; delightful for cut flowers, height 4 feet.

Alfred Vasey is one of the best, having long stems, and the flowers carried above the leaves; a fine plant for garden decoration; the flowers are of medium size and most useful for cutting; the colour is bronzy pink, height 3 feet.

Capstan is very similar to the above in habit and style of flower; colour a soft brick red; a fine decorative Cactus variety, 3 feet high.

Mrs. John Goddard.—One of the very best; a glowing crimson-scarlet flower of fine shape, first rate for any purpose; 4 feet high.

Mary Service.—A novel colour of salmon pink and yellow, will be a great favourite; fine habit; 3 feet high.

Fulka.—A good flower of undecided colour, sometimes rosy crimson, but pales quickly with age; free bloomer, and dwarf habit.

E. J. Deal.—A magnificent colour, bright scarlet, but shy bloomer and very tall, nearly 6 feet.

Laverstock Beauty.—Colour vermilion; a bright useful flower. The plant has a good habit, but is not free flowering; stiff stems; 4 feet high.

Casilda.—A delightful shade of sulphur yellow, tinted with pink on the older petals; very free, but has not long flower stems, and has a tendency to be semi-double.

Daffodil.—Sent out with a flourish to beat that best of all Cactus Dahlias, Lady Penzance; but has not sustained its reputation. The blooms are fine, but have short stems.

Ethel.—Lighter in colour than the preceding, but is a splendid shaped flower, but not very free; 5 feet high.

Octopus.—A monstrous flower, sometimes pure white, often suffused with lilac; free flowering, and will be a favourite with some people.

Tillie.—A dwarf variety, growing 2½ feet high; salmon, suffused with rose; a nice colour, but not a very good Cactus flower, although certificated by the National Dahlia Society.

Standard Bearer.—Fiery scarlet; good and free flowering, first-rate habit; 3 feet high.

Ruby.—As its name suggests is ruby red; a free flowering sort with stout stems, good habit; 4 feet high.

Oaklands.—Salmon rose; True Friend, dark crimson; W. J. Frost, rich crimson; and Eileen Palliser, yellow, are fairly good; so also are King of Siam, dark; Mrs. Scrase Dickens, yellow; Profusion; and many others; but the best are those I have described. These were seen in the South and in the North under widely different conditions, and received a good test.

Not so much attention is devoted to the raising of Show and Fancy Dahlias now, as the Cactus sorts take all the raiser's attention. Yet the double type will give a far better effect in a garden than all the quaint Cactus-shaped sorts. Last autumn I saw an acre of Cactus varieties growing alongside of a quarter of an acre of the double type. On the doubles there were thousands more blooms than on four times the quantity of plants of the Cactus.

Harbinger.—A lovely shade of peach, over the medium size, and of splendid form, was raised by that veteran florist, Mr. G. P. Harris of Orpington, and is one of his best varieties.

Muriel Hobbs.—Fine yellow, of splendid petal and outline; a first class variety.

J. R. Tranter.—A fine terra-cotta in colour, is also excellent.

Nansen.—A fancy variety, orange scarlet tipped with gold; a neat shaped flower.

Some delightful single Dahlias continue to be sent out, but the demand is decreasing yearly, which is unfortunate, as plants of single Dahlias make delightful objects in the garden, even if the flowers are not so much used for cutting. Duchess of Marlborough, white edged with crimson; Colton Beauty, white margined with yellow; Mrs. Phillip Hoare, rich velvet maroon; and Janet Braes, magenta and crimson, were some of the best of last season's varieties.

Pompon Dahlias still retain their popularity. The small flowers lend themselves so readily for cut flowers that the Cactus varieties do not have the same effect on them as on the other classes.

Agate.—Sulphur with a white edge; is a neat little flower, and grows 4 feet high.

Nellie Bromhead.—A beautiful mauve; is one of the prettiest of Pompons, and will be sure to stay for years; dwarf habit and free.

Hypatia.—A nice flower; amber, and yellow edge; very distinct, and of good shape; 3 feet high.

Zoe.—Yellow, tipped with white; is a pretty Fancy; 3 feet high.

Several good single Cactus were sent out, but all by one firm, who make a speciality of this beautiful section. I hope to devote a few lines to all the varieties in this class shortly.—GEORGINA.

THE YOUNG GARDENERS' DOMAIN.

FORCING LILY OF THE VALLEY.

No flowers are more useful during the winter months than the Lily of the Valley from forced crowns or clumps. Single crowns are greatly to be preferred to imported clumps, for when the latter are employed few flowers are obtained, and those produced are inferior in quality. Single crowns when well grown provide splendid spikes of blooms equally all over the pot, which easily repay the little extra cost at the outset. About fifteen good crowns can be placed at equal distances apart in a 5-inch pot, after removing the roots to within 2 or 3 inches of the bud, and any soil may be employed, as few roots are made, but it must be made firm and the crowns kept above the soil. Place the pots in a cold frame and cover with cocoa-nut fibre refuse or moss to swell the crowns, taking care not to overwater, as that causes decay. From this position bring them gradually into heat, and keep the moss over them till the crowns burst. The pots can then be plunged in bottom heat of about 90°. The plants may be flowered in two or three weeks, but when thus hastened very little foliage may be produced. It is better to have the pots some distance from the glass, as if too close the spikes are short and stumpy.—F. SIDWELL.

GLADIOLUS THE BRIDE.

THE blooms of Gladiolus The Bride are very useful where decorating, bouquet and wreath making are done largely, especially if they are flowered early; therefore I will write a few notes as regards their culture. The bulbs may either be grown in the open or in pots. For early flowers pot the bulbs at the end of September in 6-inch clean, well-drained pots, allowing room for watering, the compost consisting of two parts loam, one part sweet horse droppings and leaf soil, with a good sprinkling of sand. After the bulbs are potted plunge the pots in frames, using fine ashes for that purpose.

When root action has commenced, a few pots may be taken in, if required early, affording them a temperature of 65° to 70° at night, 70° to 75° by day; be sparing with water at this stage, only applying when it is necessary. When the plants are showing their flower spikes, it will be found necessary to place a few stakes around the pots, and also pieces of raffia to support them, and to remove them to a cooler house with a night temperature of 58°. At this stage a little weak liquid manure will be beneficial to them, increasing its strength gradually. Thomson's Vine manure mixed with clear water will be found a good stimulant, using a small handful to 2 gallons of water. To maintain a succession of flowers, take in the pots at intervals, treating as before stated.

Turning to the outdoor culture, the plants can be grown either in beds or patches. In the latter case they make a grand effect if planted near the front of herbaceous borders. If beds are required the rows should be a foot apart, and the bulbs 2 inches or 3 inches in depth. Early in March is a very suitable time for planting, and in doing so, if the soil is rather poor, apply some well decayed manure to it. When the plants appear above the surface, and the rows are distinctly seen, hoe lightly between them, to destroy any weeds, and also to loosen the surface soil. If the weather becomes hot and dry watering should be attended to, after which give a light mulching of Mushroom bed refuse, as by so doing the bed will be kept moist for a longer period.—P. R.

IXORAS.

FEW plants requiring stove temperature are more valuable both for exhibition or decorative purposes than Ixoras. Large specimens with rich deep green foliage and noble heads of flower have an imposing effect, while smaller plants, with from one to half a dozen trusses, can scarcely be excelled during their flowering period.

Ixoras can be propagated by cuttings formed of short-jointed half ripened shoots, inserted firmly in thumb pots in a compost of peat, leaf soil, a little fibrous loam, with a liberal portion of sharp silver sand. The pots must be plunged in bottom heat in a stove or propagating pit, and in a few days roots will be emitted. When these reach the sides of the pots transfer them into a larger size, and eventually into 5-inch pots, using the same compost as before. Healthy medium sized plants in these pots, carrying half a dozen flower trusses, are very valuable for many purposes of decoration. Future shifts must be at the grower's discretion, according to the sizes of plants required; but too much soil is never advisable, as it may become sour and unhealthy plants be the result.

Liquid manure may be afforded occasionally when well established. Too much water must not be given to the plants in winter time. During the

growing period give ample heat, and syringe freely when required, and the pots should be half plunged in a hotbed. Straggling shoots must be stopped to give two or three shoots instead of one. This treatment should continue until September, with a little shade from bright sun. The pots ought then to be placed nearer the glass, and in full light, syringing being resorted to at times, but must be gradually discontinued, and water at the roots also lessened, though never so as to cause the plants to droop. The object of this is, of course, to ripen the shoots formed. With the moisture lessened the temperature may be allowed to fall to 60°. A rest is thus given in the dull season.

About March or earlier the temperature may be gradually raised, and the pots be plunged in a sweet hotbed, with openings below to insure drainage. Water at the roots will be more needed, and the syringe should be used before the flower trusses show, when a drier and cooler atmosphere should be given to preserve the blooms. Under the foregoing treatment *Ixoras* have done splendidly, and have fully repaid all the attention given during the growing and ripening period.—INTERESTED.



FRUIT FORCING.

Cucumbers.—The plants raised from seed sown at the new year and transferred to the ridges or hillocks in the Cucumber house need not be stopped until they have extended two-thirds up the trellis. Train the laterals about 1 foot distance apart, and do not stop them until they have extended about two-thirds across their allotted space sideways. A vigorous growth is thus secured, and the plants will crop much better and longer than those which are pinched from near the bottom of the trellis with a view to early fruit. If the latter practice is followed care must be taken not to overcrop the plants, or the growth will be stunted, and not enough made for a successional and regular supply of fruit.

Winter Fruiters.—As the light and sun heat tell advantageously a greater supply of atmospheric moisture is needed, keeping the evaporation troughs charged with liquid manure, or sprinkle the paths occasionally with it at closing time, damping with water in the morning and early afternoon. Supply top dressings of fresh lumpy loam at fortnightly or three weeks' intervals, and sprinkle on each square yard a handful of a mixture of bone superphosphate and soot in equal parts by measure. Thin the fruits well, remove superfluous growths, bad leaves, tendrils, and male blossoms, stopping the shoots one joint beyond the fruit, avoiding overcrowding. Maintain a night temperature of 65°, 70° to 75° by day, advancing to 80°, 85°, or 90° from sun, and closing early so as to run up early in the afternoon to 95° or 100°.

Vines.—*Early Forced in Pots*—The Vines started early in November, and being strong well-ripened canes, have, under proper management, the Grapes in an advanced state, and soon will be taking the last swelling. This occurs with the colouring, when they swell more than at any other stage, therefore supply fresh top-dressings of turfy loam or lumpy well-decayed manure, with a sprinkling every ten days or fortnight of superphosphate three parts and one part powdered saltpetre, mixed. This not only feeds but encourages root action, and the roots absorb liquid manure, which should be supplied warm, copiously and not too strong. Maintain a genial condition of the atmosphere by damping the paths and walks two or three times a day, especially at closing time, which should be sufficiently early to run up the temperature to 85° or 90°.

Stopping, Tying, and Regulating Shoots.—The growth in houses started a few weeks ago will be sufficiently forward for disbudding, but not attempting it before the best breaks can be discerned. The operation should be performed gradually, removing the weakest and worst placed first, and ultimately leaving no more growths than there is space for the full exposure of the foliage to light, always retaining the most promising for fruit. Stopping should take place at one joint beyond the bunch where the space is limited, but two joints ought to be left where there is room for lateral extension. Tie the growths before they touch the glass, bringing them down carefully, as they are liable to break. Allow sufficient room in the ligature for the swelling of the shoots, and loosen all those that are too tight.

Vines in Flower.—Cease syringing, yet avoid a very arid atmosphere, and prevent condensation of moisture by a little ventilation constantly without causing a draught. Temperature 60° to 65° at night, 70° to 75° by day artificially. Carefully fertilise shy-setting varieties, brushing the bunches lightly with a camel's-hair brush, and then follow with some charged with pollen collected from free-setting sorts, such as Black Hamburgs. Fertilisation is imperative in the case of Muscats, attending to it on a fine day after the house has been ventilated a short time, and always when the "caps" part easily from the tips of the flowers, as then the stigmas are ready to receive the pollen.

Thinning Grapes.—Never allow this work to get into arrear, but thin free-setting varieties as soon as they are fairly out of flower, taking out the smallest berries first, and then going over the bunches again, so as to leave only sufficient berries to form a compact bunch, each berry being allowed space to swell to its full size without wedging or losing its natural

form. This requires the exercise of a little judgment, and can only be acquired by experience. Muscats and all shy-setting varieties should not be thinned until the properly fertilised berries can be distinguished, as they may by their taking the lead in swelling, whilst the unfertilised remain almost stationary.

Feeding.—After setting and thinning the Grapes swell fast, and should be accelerated by judicious applications of liquid manure, encouraging surface roots by light mulchings of lumpy manure, such as sweetened horse droppings, and sprinkling on each square yard a small handful of the mixture advised for Vines in pots. Attend to watering as required, not having stated times, but always make an examination of the border, and supply tepid water whenever necessary, but then only, and always sufficient to moisten the soil down to the drainage. Overwatering is even worse than too little, as it makes the soil sodden and sour, and shanking follows. Maintain a genial condition of the atmosphere by damping the floor and border in the morning, at closing time, and in the evening. Make the most of sun heat by early closing, running up to 85° or 90°, and this will maintain a good temperature into the night, when it should gradually fall to the minimum temperature of 60° to 65°. Admit air in the morning before the sun has raised the temperature more than 5° to 10°. This should be done without lowering the temperature, and the Vines will be saved from scorching.

THE KITCHEN GARDEN.

Cropping the Ground.—The rainfall has been exceptionally heavy, and when a change takes place the ground in many instances will be found slow in arriving at a suitable condition for cropping. Once more, then, the advice not to be in too great a hurry in sowing seeds and planting other crops is the best that, under the circumstances, can be given. Especially is this the case with cold clayey soils, and those who have to deal with these ought to forward Peas, Beans, Cauliflowers and Lettuces, by sowing under glass, planting out in due course.

Cauliflowers.—Good late Broccoli is none too plentiful, and if the mild weather continues the supply will not hold out so late as usual. This being so there is all the more necessity to take extra care of autumn-raised Cauliflower plants. These transplant better out of 4-inch pots than they do from boxes, and a little time will be gained by establishing in these pots in gentle heat under glass, taking care to harden them before they become badly root-bound, planting in hand-lights across the garden or in a rough deep frame over a bed of soil and manure. They will not bear forcing, and must not be unduly coddled. If seed of the small early sorts are sown now in gentle heat they will germinate quickly, after which shelves near the glass in a cooler house or pit is the best place for the plants. When they have formed a rough leaf, pot singly or in pairs, and treat as advised in the case of the autumn-raised, only in this case a portion of the plants may be planted on a warm border and the rest in the open.

Lettuce.—A few or many plants of early and second early Cabbage and Cos varieties of Lettuce, raised from seeds sown in pans or boxes under glass now, should prove of service in keeping up the supply of salad. Avoid sowing the seed thickly, and raise the plants in gentle heat. Harden early, and prick out in sheltered nursery beds, where a portion of the plants may be left to heart-in, transplanting the rest when large enough to sunny well-manured borders.

Garlic and Shallots.—Directly the ground can be got into a suitable condition roots of both kinds should be planted. It must be remembered that single divisions (cloves) will grow into large roots, while the larger-sized roots, planted whole, will split up during the growing season. Press them into well prepared firm soil, rather more than half burying them, and if disposed 6 inches apart, in rows 9 inches to 12 inches asunder, this will be allowing ample space. If Parsley is raised under glass, with a view to having early gatherings of leaves, this may eventually be dibbled out midway between the Garlic and Shallots, in which case the rows of the two latter should be fully 12 inches apart.

Seakale Propagation.—Where young roots are lifted and forced a fresh stock of plants has to be raised every season, and early propagation means a good start towards obtaining the desirable strong roots. When the roots are lifted for forcing all the stronger thongs unavoidably or purposely snapped off should be saved, and stored in moist soil or sand. These may be cut into 3-inch or 4-inch lengths, marking the smaller end, which is to be the rooting end, by slicing a small piece off it. Store the cuttings thickly to their full depth in boxes of fine soil or common sand, and arrange them in cool house, frame, or shed for the present. By the time they have formed a few roots and commenced top growth the ground ought to be ready for their reception, and planting-out take place.

The Mushroom House.—Mushrooms are impatient of much fire heat, and whenever the weather is mild it should be dispensed with as much as possible. A temperature of 55° answers well, and a newly formed bed will often serve to keep up sufficient warmth. Beds that did not start producing before midwinter or as soon as expected, may yet do good service. Examine them, and if found cold and damp with few or no traces of the spawn having run, they may well be broken up, and their room devoted to fresh beds; but if dry and apparently overrun by a white mould, the chances are a good crop of Mushrooms may yet be forthcoming. Apply enough tepid water through a rose to well moisten the soil and manure, more than one application being necessary to accomplish this, afterwards covering the bed with 6 inches of stained straw or litter. Watering with tepid water impregnated with salt will sometimes put new life into an apparently exhausted bed, especially if this can be supplemented with the heat from a fresh bed formed below.

THE BEE-KEEPER.

CONDITION OF STOCKS.

OWING to the mild weather which on the whole has prevailed throughout the country during the past winter many of the stocks may now be short of stores. This will be more apparent in colonies that were not fed last autumn. The fine bright weather experienced during early autumn, and the large amount of honeydew that was still on the trees, kept the bees breeding much later than usual. The result was a large consumption of stores. This did not seriously affect colonies that were in an ordinary hive on which was placed a top storey of full-sized frames, a crate of sections, or shallow frames. These would have ample stores and to spare. Others, which from various causes were not in this condition, owing to the bees being confined on a given number of frames in the body of the hive, will now require attention if the best results are to be expected from them during the coming season, and as a query comes to hand from a new reader of these notes *re* candy and how to make it, a few words on this subject may be of interest.

MAKING CANDY.

Many bee-keepers find a difficulty in making a fine-grained, moist, soft candy, although the operation is to an experienced man very simple. We failed in our first attempt, owing to having too strong a fire; there is now no danger of this, as we always use a paraffin stove. We would strongly recommend others to do so in preference to an open fire grate, as they are clean, and the heat may be regulated, so that there is no danger of the sugar boiling over, which it is liable to do when the fire is too strong. We prefer a fine, granulated sugar, and if the right kind is obtained it will be ready for taking off the stove after it has been boiling for two minutes. Another kind of sugar, very similar in appearance to the above, may be used, but it will require to be boiled for at least ten minutes.

A brass or enamelled iron preserving pan should be used, into which put 12 lbs. of sugar, two imperial pints of water, and two teaspoonfuls of cream of tartar. Set on the stove or on a clear fire, stirring constantly to prevent burning until it comes to the boil. Turn the burners slightly down, or withdraw from the fire, to prevent boiling over until the mass begins to settle down to boil, which is readily known by the frothiness. Continue stirring, and have ready a cup of cold water for testing it, and with a teaspoon lift out a little syrup and drop it into the water. If it lie at the bottom of the cup, so as to lift like very thick paste or putty, it is just right, and ready to be removed from the fire. If too much boiled the syrup will be hard and crisp in the water. This can be remedied by adding a little water to the syrup after its removal from the fire.

The pan should then be placed in cold water to hasten the cooling process. Whilst this is taking place prepare some shallow dishes (an ordinary saucer answers the purpose admirably), and into these place some sheets of thin paper slightly larger than the saucer, or whatever is used. When all is in readiness return to the pan of cooling liquor, which should now be kept constantly stirred. At first it will be dark in colour, but as it cools it will have a greasy appearance, gradually getting whiter and stiffer. When it has become somewhat stiff, but not too much so, or there will be a difficulty in getting it out of the pan before it sets, pour into the shallow dishes prepared for that purpose and allow it to cool. The result will be a fine-grained soft candy which will be taken readily by the bees. The candy may be removed from the saucers as soon as it is cold and well set.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Barr & Sons, King Street, Covent Garden.—*Bulbs.*
 Dickson, Brown, & Tait, Manchester.—*Farm Seeds.*
 Dicksons, Ltd., Chester.—*Farm Seeds.*
 J. Forbes, Hawick.—*Florists' Flowers.*
 W. J. Godfrey, Exmouth.—*Chrysanthemums.*
 Sutton & Sons, Reading.—*Farmers' Year Book.*
 Vilmorin, Andrieux, & Co., Paris.—*Chrysanthemums.*
 W. Watson & Sons, Clontarf Nurseries, Dublin.—*Florists' Flowers.*



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Physianthus albens (*Aspirant*).—As the issue containing the illustration of the white Bladder-Bloom is out of print we are reproducing the block on page 149. The spray depicted was sketched from a specimen exhibited before the Royal Horticultural Society in 1885. The plant is very seldom seen in cultivation.

Black Currant Bud Mite (*G. P.*).—There is not the slightest doubt but that your bushes are attacked by this insidious foe. If the plants are badly infested we should lift and burn them, afterwards heavily liming the ground. You cannot do better than follow the advice given to "T. D." on page 38 of our issue of January 12th, 1899.

Worms in Soil (*J. C.*).—The small lumps of earth swarm with "white worms," *Enchytraeus Buckholzii*, which attain a length of about 1½ inch, and injure plants by sucking the fine root hairs and thus set up decay, when they feed on the dead matter. The worms also produce a sodden condition of the soil, due to working and feeding on the organic matter, and cause ill-health, if not actual decay of the roots of plants grown in it. They are generally most abundant in soil containing a large amount of vegetable remains, such as turf. The worms readily succumb to dressing with quicklime, using about ½ lb. per square yard, slaking the lime and applying when cool, always in an apparently dry, floury condition. The watering will carry some of it into the soil, and the worms reached will be destroyed. Lime water made by placing a peck of quicklime in a tub, pouring on 30 gallons of water after slaking, leaving for a week if possible, and using the clear liquid for watering the plants, is valuable, but must not be used at frequent intervals. The worms also yield to kainit, applying in solution, 1 oz. to a gallon of water. Both the lime and the kainit will benefit the Tomatoes, taking care not to make the ground sodden by needless applications. The soil, however, ought to have mixed through it before using for plants 2½ per cent of air-slaked chalk lime, partly to make an end of the worms, and partly to supply that element for reducing the organic matter into assimilable plant food.

Grapes and Peaches in the Same House (*C. H.*).—These have been produced more or less satisfactorily in the same structure during the last fifty years to our knowledge, the Vines in most cases occupying the roof and the Peach trees the back wall of the house—a lean-to facing south. The first structure we saw with both Vines and Peach Royal George and Nectarine Elruge trees in it had the Vines or rods 4½ feet apart, or one to each rafter, and 18 inches from the glass, the Vines (Black Hamburgh and Muscat of Alexandria) being spur-pruned. The roots of the Vines were wholly outside, and extended in sandy loam over 20 yards from the house. The Peach and Nectarine trees occupied the centre of the vinery, being trained to a sloping trellis fixed 6 feet from the glass. The Peaches and Nectarines were large, well coloured, and of good quality, ripe in July. The Black Hamburgh Grape ripened in August and the Muscat of Alexandria in September. In 1897 we saw Peaches and Grapes grown in a lean-to house, the Peach trees on the back wall and the Vines 6 feet apart on the roof. The Peaches, ripe early in August, were good in crop, large in size, and of first-rate quality, while the Grapes were colouring well and the crop a heavy one in medium sized bunches. The foregoing will give you some idea of what may be done, your case being better, as you propose planting the Vines on one side of the house and the Peach trees on the other. Still we do not approve of the mixed system, it being more satisfactory to have separate structures for each fruit.

Silico fluoride of Ammonium (*J. A. S.*).—The article is not in commerce, it being a preparation due to the genius of Mr. W. Mills, and by him first brought to notice in the *Journal of Horticulture* for the destruction of pests. Mr. G. Abbey had his supply from Mr. Mills, who would no doubt treat you in a similarly obliging manner. If you write to him, care of Editor, 8, Rose Hill Road, Wandsworth, we will forward the letter.

Seedling Hollyhocks (*W.*).—The better plan would be to transfer the seedlings into larger pots, growing them in the cold frame and hardening before planting during mild weather in April. This will give much finer plants and a better prospect of bloom this summer, there being nothing like a strong plant with plenty of active roots ready to lay hold of the soil without delay.

Planting Carnations (*Idem*).—The beginning of March is much too early to plant out yellow-ground and other Carnations wintered in a frame, as the winds are often very sharp and cold, thus stunting the "grass," especially as the winter has been mild. We should keep them in the frame, well ventilated, until April. If the weather prove mild during March the stock may be planted out, but we should not be in a hurry for the reason given, certainly deferring it until the middle or end of the month.

Vines Breaking Irregularly (*E. B.*).—It is not unusual for Vines of several different varieties in one house to start into growth unevenly, and even in individual Vines for some buds to break and others remain dormant, or not start until the others are well advanced in growth. This usually arises from indifferent ripening of the wood and an unsatisfactory condition of the roots. There does not appear to be anything wrong with the treatment, but 50° to 60° at night is a long range, yet the lower degree would not do any harm if it did not occur often, a few degrees not making much difference. Now that the Vines are coming into leaf the temperature should be kept at 60° to 65° at night, 70° to 75° by day, ventilating from 70°, and increasing it with the advancing temperature, avoiding cold currents, allowing an advance of 10° to 15° from sun heat, and closing early so as to husband it. It is best not to hurry the Vines in the early stages, but after coming into leaf they must have sufficient heat to secure steady development and progressive growth.

Increasing Rhubarb (*Learner*).—When the crowns are beginning to move is the best time to lift, split into pieces each with a crown or two and some roots attached, and replant. No crop better repays for liberal treatment at the roots. Where possible the ground should be broken up two or three spits deep and good manure mixed with each spit. The divisions may either be planted singly or in groups of three, arranging the stations 3 feet apart. Sink the divisions so as to bury all but the crown or buds, fixing them firmly. Mulch early with strawy manure, cut out any flower heads that may develop, and do not pull any leaves during the first season. Rhubarb is easily propagated from seed, but the plants do not all come true to name. The seed may be sown in March, thinly, in rows 15 to 18 inches apart, eventually moving alternate rows and half of the plants from the rest. A few weeks will be gained by sowing the seed at once in pans of light soil and placing it in gentle heat.

Rust on Carnations (*W. B.*).—Old rusted plants cannot be cured, they should be burned. Good results, however, have been obtained by removing the worst infested "grass" and then spraying the plants with dilute Bordeaux mixture, repeating at occasional intervals. The strength of the Bordeaux mixture may be 1 oz. each of copper sulphate and freshly burned lime to a gallon of water. Sulphide of potassium, 1 oz. to 10 gallons of water, has also been successfully applied, and some growers have got rid of the rust by the aid of permanganate of potassium, 1 oz. to 3 gallons of water. The application, in any case, should be made upon the first appearance of the disease, and repeated at intervals of about ten days. Of course, the thing is to prevent the disease, for which purpose we know of nothing better than dilute Bordeaux mixture, or dusting occasionally with the preparations of sulphate of copper in powder, such as anti-blight and fostite. Soluble phenyle has a burning effect on foliage, and can hardly be recommended. If it is tried begin with a strength of 1 fluid oz. to 6½ gallons of rain water.

Eucalyptus globulus in Tubs Failing (*Blackpool*).—The most likely cause of the failure is general defective conditions of growth. A cellar is not a proper place for the tubs, as the soil will be deprived of air to a great extent, and their need of water or otherwise cannot properly be attended to. The structure also is very unsuitable, "10 feet wooden walls with a rolled plate glass roof with two coats of white paint on the outside, no top ventilation, only end doors, and six rooms opening into the corridor." Besides, the plants have been in the tubs about eight years. No wonder they sicken and go off one after the other. We should consider the plants have done well to live so long under the trying circumstances, and that the collapse now taking place is due entirely to the adverse conditions. Possibly the soil has become sodden and sour, and the plants have thus died from loss of roots. Of course, they may have been overwatered, and the conditions brought about have resulted in the death of the plants. On these points we can offer no opinion. Why not procure young plants, and grow them in tubs in the house, where they could be properly attended to? The plants like abundance of sunlight and air, just the very things they are deprived of in your case. Surely white paint is not a suitable material for shading purposes, but it has no doubt been used to give the requisite coolness in the structure during the summer. Ventilation ought to be provided, and the paint removed from the glass, using "summer cloud" or such preparation as could easily be washed off, and the plants thus have modified light in summer and full in the winter.

Names of Fruits (*D. J. H.*).—1, Shrivelled beyond the possibility of recognition; 2, Wellington; 3, possibly Kedleston Pippin; 4, unknown and worthless, probably never had a recognised name; 5, not sure, resembles Dumelow's Seedling; 6, Yorkshire Beauty.

Names of Plants (*T. E. R.*).—Specimens packed as yours were seldom reach us sufficiently fresh for identification. 1, is possibly *Davallia canariensis*; 2, too small and withered to even permit of a suggestion being made. (*P. A.*).—1, *Cattleya Trianae*; 2, *Cypripedium insigne*; 3, *Adiantum cuneatum*, varietal form; 4, *Pteris cretica albolineata*. (*W. T. C.*).—*Zygopetalum Mackayi*.

COVENT GARDEN MARKET.—FEB. 22ND.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Cobs ...	30 0	40 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb. ...	1 2	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, ½ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 1 0
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Bouvardias, bunch ...	0 4	0 6	Narcissus, doz. bnchs. ...	1 0	2 0
Carnations, 12 blooms ...	1 6	3 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, single yellow, beh. 12 blooms ...	0 9	1 0	Pelargoniums, doz. bnchs.	6 0	10 0
Daffodils, double, bunches	0 6	0 9	Poinsettias, doz. blooms ...	0 0	6 0
Eucharis, doz. ...	2 0	3 0	Roses (indoor), doz. ...	2 0	3 0
Freesia, doz. bnchs. ...	2 0	4 0	„ Red, doz. ...	6 0	8 0
Gardenias, doz. ...	9 0	12 0	„ Tea, white, doz. ...	2 0	4 0
Geranium, scarlet, doz. bnchs. ...	6 0	8 0	„ Yellow, doz. (Perles)	2 0	3 0
Hyacinths, Roman, bunch	0 6	0 8	„ Safrano, doz. ...	1 0	1 6
Lilium lancifolium, white	0 0	0 0	Smilax, bunch ...	2 0	3 0
„ longiflorum, 12 blooms	4 0	6 0	Tulips, bunch ...	0 4	1 0
Lilac, bunch ...	3 0	4 0	Violets doz. bunches ...	0 6	1 6
			„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	9 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



A TREAT FOR DINNER.

We believe it was said of the good king Henri Quatre, the Huguenot monarch of France, that he had so much at heart the prosperity of his subjects, great and small, that he did all in his power to promote prosperity, and that he considered one sign of that prosperity was that every poor man in his dominions should be able to afford a fowl to improve the contents of his Sunday soup pot.

We do not know whether the English artisan will ever arrive at this comfortable consummation; but we fancy a good many of them would have no objection to such a savoury morsel, and we fail to see any reason why the fowl dinner for Sunday, or indeed any other day, should not be greatly on the increase.

Fowls have come to be considered, first, the rich man's delicacy, and, second, the sick man's diet. So far, so good; but when we consider the quantity of excellent food on a fine fowl we wonder that it is not more sought after as a substitute for the everlasting beef and

mutton. Most households contain children, many a fine percentage, and a fowl would prove such an excellent and easily digested food for the youthful stomach.

Consider for a moment the numberless ways and the different guises in which this bird might be presented at table. He goes far because he brings with him so many little extras, not costly in themselves, but forming such pleasant additions.

Be a bit of bacon really too fat for any other purpose it goes down beautifully with the lean white meat. Be a loaf never so stale what excellent bread sauce it will make with the addition of a tiny—very tiny—onion, a little milk, and seasoning! Or, again, the same bread, with a portion of the fat bacon and a handful of garden herbs, is converted into the most excellent of stuffings.

With the boiled fowl may be used many of the white vegetables, which add much to the tastiness of the dish. For a bird which has seen several summers nothing beats a pie. Kill him, hang him several days, gently stew, then deposit under a plain but light crust, not forgetting the bacon and plenty of potato.

But we did not mean to write cookery recipes; we were going to talk of table poultry, and we are, well, not far afield, but, at any rate, intruding on the domain of the "Missus." She will perhaps say she can tell us more of table poultry than we can ever hope to know. We suspect she can, but perhaps is bashful, and leaves the work to our poor male pen.

Poultry may be divided roughly into three classes:—

I.—Poultry for showing.

II.—Poultry for egg production.

III.—Poultry for table.

The three classes cannot, and must not be confounded.

Far be it from us to look slightly on the exhibition; the exhibitors show us the best possible types. We have to take these types and adapt them to our purpose.

For table poultry we must aim at (1) early maturity, (2) quality, (3) quantity. We want small bone, much meat, good meat, firm meat, and quickly grown meat.

A silk purse cannot be made of a sow's ear, neither can inferior poultry be made into first-class "dead meat." We must begin at the very beginning; do away with all mongrel sorts; in fact if we have a mixed lot of ordinary barndoor fowl it is well to make a clean sweep, we then know what we are doing. We get rid of all aged and unhealthy birds, all crooked breast, and all bad doers—i.e., those with a touch of liver or tuberculosis.

To really succeed our best plan is to take a pure Dorking hen and cross with an Indian Game cockerel of a year old. The Dorking is a large type of fowl with very plump breast; the Indian Game cock is all meat, and the cross produced is, we may say, a perfect type of what a good table bird should be. Some breeders will after this cross mate the pullets with a Dorking cock, but after that no more crossing is desirable.

The chicks when hatched (which they should be early), for choice in an incubator, must be kept well up to the mark by constant and judicious feeding, and by a genial warmth. Without warmth no little chickens can live. We saw an instance of this the other day, where some foster-mothered chickens died in a very short space of time as the heat of their habitation had, through some carelessness, been allowed to go down. Chickens are always glad to avail themselves of an outside run, and whenever there is a gleam of sunlight they are out enjoying and benefiting by it.

We have only seen "cramming," so cannot speak of it from a practical point of view, but we know we can get chickens (of the right sort) very fleshy with ordinary good feeding. There are many other birds, or rather breeds, recommended as suitable for table purposes, but the consensus of opinion is all in favour of the cross of which we have spoken—Dorking hen, Indian Game cockerel, each the best of its kind. We hear of Langshan-English Game, which is really capital, La Bresse, La Flèche, Houdan, and Faverolle. Of these French birds we know best the Houdan, but we consider it, though large, a trifle coarse and given to bone. On the other hand it is an

excellent egg-making machine; and therefore is somewhat of a favourite.

We close with a description of what a Dorking should be, taken from the writings of a noted breeder thereof:—"A Dorking must be large in frame, long, deep, and broad in body, or it cannot possibly carry a great quantity of flesh, and as breast meat is especially desirable, we must look for specimens with large wings, for the breast muscles are the motors which open and close the upper limbs."

WORK ON THE HOME FARM.

Thunder and lightning, wind and rain! Floods are out everywhere that floods are possible, and even dry lands are becoming saturated.

Farmers who are always on the look out to keep forward with their work are distinctly getting out of patience with the present state of things. As we are promised a visit from the blizzard, which has played such havoc in the States, there is a prospect that their patience may be still further tried. We are ploughing our light sandy field for spring corn; it is land so dry that it never sets, and it is turning over well. A moderate frost after ploughing would put it into excellent trim.

We have carted manure out until the roads, and especially the gateways, are almost impassable; however, the congestion in the yards has been relieved, and we can leave that alone for a time. The difficulty is to find work for the horses. We are carting Thorns about, and filling up gaps and holes wherever Thorns are of use. There are heaps of road scrapings and refuse to be put on the land, but the same objection holds good here, as in the case of manure leading. Dry high-land grass, however, will carry the carts without much damage, and if the District Council is doing even half its duty, the roads should at any rate be passable.

Perhaps we may hear the remark, "Why make work when none needs doing? Give the poor animals a rest." Well, that sounds plausible enough, but it is not easy to keep a horse both healthy and idle, unless he is turned out to grass, and it is absurd to think of turning a horse out for a day or two in February. It is difficult to get the corn taken off unless the master feeds them himself, and a horse on dry winter food, kicking, not his heels, but the stall partitions, soon has a tendency to develop ailments which, with work and exercise, he would be quite free from. No. Keep your horses regularly and steadily at work; do not push them too far, but remember that one rest day in the week is quite sufficient.

If records were kept on every farm of ailments amongst the horses, and the statistics connected therewith could be tabulated, it would probably be found that a large and undue proportion of illnesses occurred on Mondays.

OUR LETTER BOX.

Books on Cows (R. A. C.).—"Cattle: Breeds and Management," by W. Houseman, 3s. 6d., Vinton & Co., 9, New Bridge Street, Ludgate Circus, E.C., is the best, if reference to diseases be important, as it has a chapter on diseases by Prof. J. Wortley Axe. Apart from that branch of the subject "The Dairy," by James Long and J. C. Morton, same publishers, 2s. 6d., may be recommended as more useful. Both refer to the management and feeding of cows and calf rearing.

METEOROLOGICAL OBSERVATIONS.

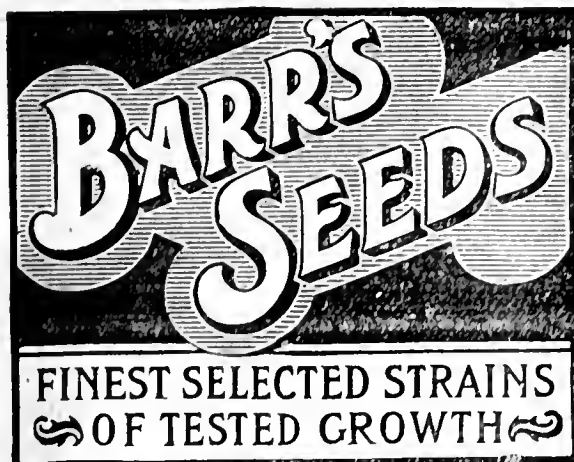
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1899. February.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	12 29.27	44.4	41.6	S. W.	44.4	50.9	41.9	75.1	38.8	0.145
Monday	13 29.30	50.7	48.4	S. W.	43.9	53.9	44.1	64.8	37.1	0.138
Tuesday	14 29.56	45.7	43.9	S.	44.0	51.4	41.1	62.1	37.1	0.020
Wednesday ..	15 29.83	46.6	45.1	S. W.	43.9	51.2	42.3	57.9	36.8	0.313
Thursday ..	16 29.92	49.1	39.3	W.	44.1	50.7	38.1	78.9	33.8	—
Friday	17 30.05	39.8	39.8	E.	42.8	53.1	36.1	75.9	28.9	—
Saturday....	18 30.07	38.5	38.5	N. E.	42.0	48.8	37.4	60.6	31.3	—
	29.72	43.7	42.4		43.6	51.4	40.1	67.9	34.8	0.016

REMARKS.

12th.—Rain from 5 A.M. to 7 A.M., 1.30 to 2.30 P.M., and after 10 P.M.; gale all day; much bright sun in morning.
 13th.—Windy with occasional sun and slight showers; heavy rain at 6.50 P.M. and 10.30 P.M.
 14th.—Alternate spots of rain and faint sun in morning; fair afternoon; slight shower in evening.
 15th.—Fair with occasional sun, and halo in afternoon; spots of rain from 5 P.M., steady rain from 8.15 P.M.
 16th.—Heavy rain till 2 A.M.; fine sunny day.
 17th.—Fog early, clearing gradually; sunny from 11.30 A.M.
 18th.—Fog early; sunny from 11.30 A.M. to 3 P.M.; more or less fog after.
 Another warm week, but not so exceptionally so as the preceding week.—G. J. SYMONS.



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A superb strain, remarkable for its free-flowering qualities and compact habit of growth.

PER PACKET, 2/6.

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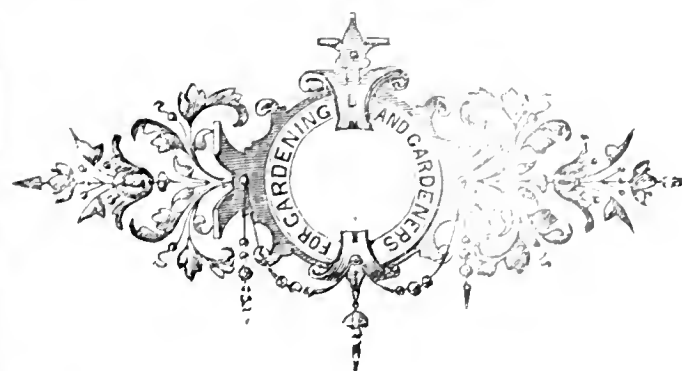
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VINES FOR PLANTING.

OPINIONS vary as to the best types of Vine or cane for planting, and what answers well in one case may fail in another position, and as nobody is better acquainted with this fact than myself, I do not intend to lay myself open to a charge of dogmatism in the matter. When it is a question of establishing Vines as cheaply and quickly as possible in an inside border, then I say give the preference to the smallest canes procurable, if these are well furnished with roots. What are known as "cut-backs" are the best for either pot culture or for planting, and they can, properly treated, be grown into strong fruiting rods the same season as planting. Early in March, or just when the few buds are bursting, they should be turned out of the pots, soaked in a bucket of water the better to uncoil the roots without damaging them, and be planted at once where they are to remain. The roots ought to be spread out evenly and thinly, and be surrounded with a little fine, good soil. If a temperature of 55° to 60° by night, with 10° increase on bright days, be maintained, these young Vines will soon develop shoots, and these continue growing steadily, but never rankly, till the time has arrived for topping them.

I have given the best kind of planting Vines, and will now describe what, according to my experience, are the worst. Most Grape growers ought to be aware that Vine cuttings inserted in the open ground will root readily, and if the position is favourable, a Vine several feet in length will result the same season. In the Channel Islands they adopt this system of raising Vines, and succeed in producing canes 6 feet in length. They are intended for planting purposes, and are offered at comparatively low prices to planters on this side of the water. Instead of proving cheap, they are "dear at a gift." In addition to the canes being soft and imperfectly ripened, they naturally start into growth much later than desirable, and this whether forced or not. They are worthless for leaving to a length of a few or several feet, and ought to be cut down to near the old wood or original cutting.

No. 2631.—VOL. C., OLD SERIES.

Nor am I believer in strong, even if well ripened, canes for planting in a border. Whether pruned severely or lightly the result is apt to be much the same. They may break evenly and grow rapidly, only to stop suddenly, from exhaustion of supplies of sap. Not till fresh roots have been formed, and the leaves have turned this new sap to good account, does top growth recommence. In the interval the wood has hardened, and good growth afterwards is doubtful, at least for that season.

What are sold by nurserymen as planting canes are much to be preferred to the larger fruiting canes sometimes secured under the impression that the rods resulting the same season will be so strong as to more than compensate for the additional outlay. Strong canes are desirable where they have to be brought through from an outside border, and perhaps have to be trained to a good height before they are clear of hot-water pipes and latticed staging—a very undesirable but all too common arrangement. Where possible I would have the whole of the stems, or from where Vines are usually fruited down to the ground, clothed with lateral growth, this assisting materially towards swelling the stems. In the case of those brought through from the outside, it is difficult to avoid having a length of bare stems, but the new growth should be originated from the lowest point that sunshine and light can reach.

Planting large balls of soil and roots intact is unwise. It is next to impossible to keep the old soil sufficiently moist without saturating the new soil surrounding it, and new roots do not thrive when they reach the latter. On the other hand, if the ball of old soil once becomes dry remoistening is a difficult matter, and a stunted top growth is the result. Greater liberties can be taken with Vines when they are recommencing top growth than at any other period of the year. At that stage large old rods may be moved a considerable distance with little or no soil about the roots, and yet, if properly replanted and not forced hard, will produce a crop of small but serviceable bunches.

The larger pot Vines may, therefore, safely have their roots uncoiled, spread out, and distributed among the soil in a border, taking care to surround them with some of the finest and best of the compost, and thus treated will take quickly to their fresh quarters. What promotes root action quickly is a mixture of equal parts of fine loam, good leaf soil, and "burnbake," and from this the roots may be trusted to spread out into the ordinary compost in due course.

There is yet another class of planting Vines to be discussed, and which by some growers are preferred to any others. If "eyes" or short cuttings of well ripened wood are inserted singly in small pots of loamy soil, say early in January, they soon root in a brisk heat. Before the small pots become crowded with roots a shift into 6-inch pots is necessary, and if kept in a light position and fairly brisk heat the Vines quickly attain to a height of 3 feet, when they ought to be planted. Naturally, these newly raised Vines succeed best when planted in an inside border which has had time to become warmed somewhat by the aid of direct sunshine and hot-water pipes; but I have known them make good progress when planted in an outside border, the soil of which was close to the front wall plate of the vinery. Early in May is a good time to plant these young Vines in an inside border, a month later answering better in the case of an outside border only being available.

Some of the grandest one-year-old canes I ever saw were grown by Mr. Roberts when at Gunnersbury. Some old Vines had been hard forced, and directly the crops were cut cleared out "bag and baggage." A narrow strip of new border was formed, and in this the young strong growing Vines were planted, if I remember rightly, early in June. By the autumn all had ripened perfectly, and a good house of Grapes, so I was subsequently informed, was obtained during the next season, and the loss of a single crop obviated.

Those who may adopt this plan of planting quite young Vines must not attempt uncoiling the roots, as this would cause a serious check to the top growth, and, maybe, make all the difference between failure and success. There is no necessity for it. They must be kept steadily moist at the roots, while the top growth should have the benefit of genial heat and a moist atmosphere.—W. IGGULDEN.

ANNUAL ASTERS.

ASTERS are popular flowers, because of their hardy and free-flowering habit of growth, as well as the brilliant show the plants usually make when in flower. The dwarf varieties, including the *Chrysanthemum* flowered, are very floriferous, and adapted for massing in beds. Truffaut's French *Pæony*-flowered is much taller. The flowers are extremely bright in colour and incurved. The Victoria Asters are also taller in growth, and have large brilliantly coloured flowers of various soft and delicate shades. The petals of these curve outwards. The variety Comet is exceedingly popular, especially the white, resembling as it does white Japanese *Chrysanthemums*. The quilled Asters are novel and peculiar, also the cockade or crown-flowered with white centres.

Asters are among the best of annuals, and easily raised from seed. No annual is more brilliant and showy during the time of flowering. Strong plants must be planted if good results are to be obtained, but fortunately this is not difficult if the right method of procedure is followed. I have always found it unnecessary to sow Asters before the middle of March, as good seeds germinate readily, and the seedlings grow rapidly under favourable conditions.

Small, shallow boxes, or 6-inch pots, are very convenient receptacles in which to sow the seeds. Efficiently drain the base with a few crocks and a layer of the rougher parts of compost, and fill up the remaining space with some light and sandy mixture. Leaf soil and old potting material is excellent for raising seedlings of Asters and other plants which do not require extra attention. Riddle the leaf soil, and mix well with the old potting material, which will probably be very dry. If so, it must be moistened sufficiently so that water will pass readily through, as after filling the pots or boxes, a watering should be given before sowing the seed. This usually obviates the necessity of applying water previous to the seed germinating. When the soil is sufficiently well drained, scatter the seeds on the surface, neither too liberally nor yet sparingly, Asters not suffering from moderate crowding in a seedling state if they do not remain too long, and are not weakened by heat. Cover the seeds with a layer of moist, fine soil and press down smoothly.

The pots or boxes may be placed in a greenhouse or in a close frame. They do not need strong heat, and are usually better without it, for seedlings raised hardily are much superior in every way. The process of germination goes on best when evaporation from the surface soil is prevented, which may be done by a covering of paper or paper and glass. When the seedlings appear admit light, and shortly elevate near to the glass in the structure so that they may have the benefit of the light. The next position for them must be airy. A frame is suitable where the lights can be opened and closed in accordance with the weather. Maintain the soil moist but not wet.

The next stage consists in pricking out the plants into boxes or in a cold frame a few inches apart, so that they may strengthen and assume a bushy habit by developing side shoots or exhibiting a tendency to do so. The soil in which the young plants are pricked out should be fairly good, consisting of loam, leaf soil, and decomposed manure. Into this the rooting will be freely made, and good fibres must produce the best plants. Four inches apart is a good distance to place the seedlings, an inch less if room is limited. The soil, whether in a frame or in boxes, may be placed over a layer of manure decomposed in character. Very little is necessary, as it is not desirable to encourage a rank growth.

Immediately after pricking out heavy watering is not required, but the plants may be sprinkled lightly in the afternoon and the lights closed. When pricked out in boxes it is assumed the latter are stood in frames until the seedlings are established. Give air freely on favourable occasions, and water as required. Full exposure must be given for some time previous to finally planting out.

Whole beds may be set apart for Asters, or borders can be occupied with the plants in masses. Liberal enrichment of the soil is helpful to the growth of the plants. Good decomposed manure or leaf soil incorporated with the soil when preparing the beds assists in retaining moisture in the soil as well as supplying food.

At the final planting lift the Asters with good balls of roots and soil attached, both being moist. Should the weather be dry at the time of planting the holes in which they are placed ought to be watered before inserting the plants. Then fill in the soil half way and water again, afterwards drawing the dry soil round the plants. They will then take no harm in the driest weather for some time. In borders with no obstructing plants a trench may be taken out, watered, and the plants placed in, soil filled in round them, again moistened, and finished with the dry soil.

The soil should be occasionally stirred about the plants so as to break the top crust and destroy weeds. In continued dry weather give water frequently, but the necessity for doing so often may to some extent be obviated by covering the soil with a light mulch of cocoa-nut fibre refuse.—S.



EPIDENDRUM WALLISI.

THERE are few more beautiful species in the genus than this, and perhaps its strongest claim to favour is the fact that for at least half the year, and generally more, the fine racemes of flowers are open, filling the house wherein it is grown with their delicate musk-like fragrance. Only recently, in visiting a neighbouring Orchid collection, I found this *Epidendrum* growing, not in the *Cattleya* house, as usual, but in a glazed corridor kept very little warmer than the *Odontoglossum* house in winter. Yet it looked well, and was flowering very freely, and while not exactly advising this treatment, I mention it to show how accommodating this beautiful species is.

I like to keep it in the *Cattleya* house, and where there are central as well as side stages, it should be on the former, so that the stems have plenty of head-room. Though usually seen some 2 or 3 feet high, these will grow as much as 6 feet, and when strong, produce the flower racemes not only from the apex, as is usual with this class, but also from the sides of the upper joints. The flowers are individually about 2 inches across, the sepals and petals straw yellow with more or less abundant crimson spots, while the lip is usually white or cream in ground colour, the crimson being disposed in flaky feathery lines. They vary a little in colouring, and if not spotted by damp, last upwards of five weeks in excellent condition.

During the time growth is most active it is advisable to keep a very moist atmosphere, and if it can be done conveniently without damaging other plants the stems should be lightly syringed at least once daily in bright weather; this will keep away thrips, these insects, if allowed to do so, soon disfiguring the foliage. The root moisture, too, must be ample, for at no period can the plants really be said to rest, while at times the demand on the roots is very great by reason of the rapidly advancing stems. Least of all is required, of course, during dull weather in winter, as it is then that evaporation goes on most slowly, and the plants are at their quietest time.

The roots are not difficult to manage. Like the tall growing section of *Dendrobium*—their old world compeers—they like a make-up of compost through which air and water filter rapidly, and nothing approaching stagnation need be feared. The pots should be fairly large and must be well drained, the crocks being covered with a thin layer of rough sphagnum moss. Equal parts of peat and moss, with a good sprinkling of rough nodules of charcoal or ballast, will make a good rooting medium, and the basis of the stems may be kept a little above the rim of the pot. Trim the surface neatly after securing the strongest growths to stakes, which will be necessary until the roots regain a hold on the compost. *E. Wallisi* is a native of New Grenada, introduced in 1874.

ORCHIDS ON BLOCKS.

While not recommending the use of blocks for Orchids in a general way, there is no doubt that some species at least like this method of treatment, and these, too, are kinds that are very difficult to grow in any other way. In a small collection of Orchids grown by an amateur not far from the breezy Newmarket Heath I recently noticed a very beautiful specimen of *Aganisia coerulea*, an Orchid that has worried many skilled cultivators more than most, yet here it was with no skilled attention beyond that of the owner, and growing away merrily.

Not that the use of blocks will always bring this peculiar Orchid into a healthy state, but there can be no doubt that the freedom enjoyed by the roots went a long way towards making it a success. The chief point to be remembered in this way of growing Orchids is that they are entirely dependent on the atmospheric moisture for their requirements, and no slackening of this must be allowed. Blocks may be of various kinds, but the most useful of all are made from stems of Tree Ferns cut into suitable lengths, according to the size and habit of the plant. Cork, apple, and teak blocks are all useful for various kinds, and I never had such a fine stock of imported *Dendrobiums* of the *Devonianum* class than some that were fastened to small rough blocks of apple wood, these in their turn being sunk in pans of clean crocks until the roots were sufficiently advanced to allow of the addition of a little compost.

The distinct and beautiful *Cœlogyne pandurata*, again, is another Orchid that does well on a long block. The pseudo-bulbs are distant from each other, and soon grow out of the ordinary pot or pan; but on a long piece of Tree Fern stem the rhizomes can lengthen and spread laterally, and will soon make a large and handsome plant. Many others could easily be named that like the block treatment, and surely

some of our Orchid growing readers have tried it, and could give instances of successful treatment or the reverse. Both would be interesting.

DENDROBIUM NOBILE WALLICHIANUM.

This is a grand form of the old species, and an excellent one for retarding so as to bring it in for spring shows. When showing in classes for stove and greenhouse ent blooms I could usually keep this back for the spring show at Bath, when it was a welcome one of twelve at that season. Its habit of flowering upon the last matured stems instead of those two years old is in its favour, especially when, as is often the case, flowers and fresh foliage are produced upon the same stems. The plant makes very long stems (pseudo-bulbs), and for this reason should—especially when flowering later—go at once into strong heat in order that the growth may be in time for ripening with the waning sun in autumn.

LELIA ANCEPS.

When this species has taken a brief rest after flowering there is generally a number of young roots that begin to push from the base of the old bulbs. Sometimes, indeed, they appear before the flowering season is really over, but whenever they are seen the plants should be gone through carefully, and any that need it repotted or top-dressed. As a general rule it is treated to too much compost, for though the roots are strong individually they do not care to push through a great thickness of material, preferring rather to ramble about over the face of a rough block or a few lumps of ballast or charcoal.

Baskets and trellised rafts often take the place of pots for this reason, the amount of air that filters through these being of great assistance to the roots. Regarding the details of culture required for this lovely plant they have been frequently given in the *Journal of Horticulture*, so we will merely say keep it in a light, fairly cool house, hardly shaded even in summer, water the roots well, and keep the plants clean. This will insure a magnificent winter display, and when the varieties are good few plants are more beautiful. Take Mr. Crawshaw's lovely variety of *L. anceps* *Amesiana*, and few will fall out with you for calling it a thing of beauty, while among those less rare and valuable there is a large number of splendid garden Orchids that will always be popular.

COLAX JUGOSUS.

Those cultivators who only like large showy flowered Orchids will probably care little for this, but it is an interesting and pretty species well worth growing by those who like such. Imported many years ago by the then famous nursery firm of Hackney, Messrs. Loddidge, the treatment at that time thought necessary for Orchids was not at all to its taste, and in all probability it was lost to cultivation for a time. If not absolutely extinct it was extremely rare, and until more rational methods came in vogue it was likely to remain so.

Heat to Orchids of this class should always be moderate and tempered by abundance of atmospheric moisture. If dry and hot conditions prevail the plants will be overrun with thrips in a very short time. Even a dozen years ago *C. jugosus* was rarely seen in the condition our best growers exhibit it nowadays, and in place of the pretty green soft-looking foliage, this was covered with black lines formed by insects. Improved methods of fumigating have helped towards this desirable end, as well as a better atmosphere. The flowers occur on three-flowered scapes, and are individually about 3 inches across; the sepals and petals white, the latter prettily marked with violet purple. The lip is three-lobed, the front one deep violet, the side lobes lighter; a very pretty combination of colour.—H. R. R.

CHARCOAL FOR ORCHIDS.

IN response to the note (page 103), in which I am asked why I discontinued the use of charcoal, I now propose giving my ideas. I am well aware that good Orchids have been grown by its aid. But do we take the trouble to find the reason why we do a great many things in connection with gardening? You rightly say it cannot do harm if of the right quality; but does it do any good? When it is not of proper quality, I think it distinctly does harm, as I have found, when potting plants which have been in the same pot or pan for four or five years, the charcoal quite rotten, and resembling a piece of black chalk, and every root that was near it dead. I have found live roots clinging to charcoal where it has been exposed to the atmosphere on the surface of a pan, or at the bottom of a basket, and therefore I consider where it is used, it should be so placed.

Charcoal, if used at all for Orchids, should be made from Oak, and even then, from the sappy portions of the wood it is not of very long duration. The heart of the wood is the portion that should be used, and this is very rarely to be obtained. The lightness of it may sometimes be a disadvantage when a plant is at rest and its roots have not a thorough hold, as when water is required the plant is apt to be, when dipped, floated out of the receptacle. I trust other growers will give their ideas respecting this interesting question, as the more we investigate these matters, the better it is for gardeners and gardens, as it is on these small matters which a great many of our hopes are shattered.

In place of charcoal I use pieces of soft porous bricks, which can generally be obtained anywhere, broken into different sizes, and used according to the size of the pans or pots used. These do not decay, and the roots seem to revel on them, and they keep the compost sweet and porous. I think when the compost gets into a solid mass, as is mentioned in the note, it is usually to be attributed to faulty watering. Of course the compost will naturally decay, but if the plants are doing satisfactorily I have always found that they are ready for a shift by the time the compost is sour.—J. T. B., *Hessle*.

EUPHARIS CULTURE.

IN moving from one situation to another a young man will find at times distinct methods pursued in the treatment of the same plant, and having in my journeyings seen several successful ways of growing *Eucharis*, a few notes culled from memory may be acceptable to readers of the *Journal of Horticulture*. No plants in our hothouses afford more pleasure than a collection of well-grown *Eucharis amazonica* (grandiflora), free from the dreaded mite, and kept clear of that great enemy mealy bug.

Living in the north of London some years ago, I first made the acquaintance of a large number of these plants; I had had to deal with them before, but only on a comparatively small scale. To begin with the treatment. In November the plants were cleaned of all pests, and plunged in a hotbed at the end of a Pine stove. Here year by year they flowered at the end of December. How proud we youngsters were of them, and indeed they made a beautiful display with their leathery leek-green leaves, and splendid flowers rising above them in the dead of winter. After a few weeks we were rewarded by a second crop of blooms as good as the first. About the end of April the plants, as a rule, flowered again, but neither the spikes nor the individual flowers were so good at this period. Manure water and soot were given during the weeks of forcing, alternately with clear water, the old safe rule of weak and often being followed. Of course a brisk temperature was found necessary, and as far as possible provided, from 65° to 75° being aimed at. Syringing was practised on the foliage on fine sunny days, abundance of moisture in the growing season appearing to meet all requirements.

In May they were moved into a cool stove to rest and in a measure recuperate, and from about the middle of August until forcing time again they were relegated to a corridor connecting two ranges of vineries. Labour was none too plentiful in that establishment, but the *Eucharis* had to be kept clean, and so now and again a solution of paraffin and rain water (a wineglassful to 3 gallons of water) was mixed in a large tub; one man was told off with a syringe to keep the mixture in motion, and another to dip the plants as they were brought out, and wash with clear water before being taken back to their places. It was surprising how quickly the plants were cleansed in this manner.

I never knew the veterans to be potted; some younger plants, however, which were being grown into large specimens, were transferred each year to larger pots, with a compost consisting of three parts loam, one of leaf mould, a small addition of decayed manure, and a dash each of sand and soot. Where these plants were placed in the autumn the old-fashioned sliding roof-lights were always down full length, for the purpose of ripening the wood of the Peaches on the back wall, the front sashes being also open night and day. I have seen the leaves white with morning dew, quite as near hoar frost as it ought to have been. The plants, however, showed no sign of injury, though the foliage lost some of its vigorous colour, but this soon returned when the plants were again in a higher temperature and being generously fed. Watering, of course, was a matter which required great care; at the time of cool treatment very little was necessary, and that only at long intervals.

After a year or two it was my good fortune to have charge of a houseful of these beautiful plants. Here we had plenty of labour, and to keep the foliage free from mealy bug the sponge was requisitioned. In October the temperature of the house in which the *Eucharis* were growing was lowered about 10° for a few weeks yearly. With this exception the culture was practically the same all the year round, a rather high temperature with a corresponding amount of moisture in the atmosphere being given. It was seldom we were unable to cut two or three dozen blooms, even when they could scarcely be said to be in season.

Unless a pot happened to get broken, or, as not infrequently occurred, the pots were burst by the roots, revealing the great white bulbs, I never saw one of these plants potted. I believe for eight or ten years no general repotting took place, yet the plants looked in the pink of health, and certainly I have seen none since to flower better or so continuously. With the few weeks' exception of rest previously mentioned feeding was carried on throughout the year, liquid manure being given once a week and a very slight dusting of "Thomson's" at lengthy intervals.—J. SHALFORD.

NOTES ON CINERARIAS.

FEW plants are better adapted for conservatory decoration during February and March than *Cinerarias*. When a good strain has been grown they provide an endless variety of beautiful shades of colour which give pleasant surprises daily to flower lovers. Hybridists have long devoted special attention to them, and their efforts have been splendidly rewarded; there seems, indeed, to be no limit to the beautiful shades of colour which are being continually produced, if we except a yellow form, which is never likely to be raised, seeing that blues and yellows never occur in the same species of florists' flowers. It seems scarcely possible to produce plants of a better habit of growth, or individual flowers of larger size and finer substance, though there is undoubtedly room for improvement in the form of some of the large flowers, they lacking the perfectly circular shape, with the edges of the petals overlapping in a way that delights the eye of an expert florist. True, we have many flowers quite perfect in this respect, but the giants, as a rule, have a weakness in that direction. This, however, is a matter which will probably be overcome in course of time.

Cinerarias are as easy to grow as most plants when the right system is pursued, but few things will go wrong sooner if in the least neglected. It is no uncommon occurrence to see a grand collection of plants at the time they are housed in the autumn: but when the flowering period arrives, the same set of plants often look disappointing by reason of the edges of the leaves having become browned, and in other ways disfigured. This is generally more noticeable among plants grown in small pots than in larger specimens; why this is so I will attempt to explain. Two things will cause disfigurement of the leaves—viz., mistakes in watering and overcrowding. The seed for plants intended to be flowered in 5 and 6-inch pots is often sown too early, with the result that by the time autumn arrives the soil is so packed with roots that unremitting attention is required to keep them from going wrong. As long as the plants remain in cool pits where they can be given abundance of air and room, they thrive well; but by the time November arrives, it is seldom safe to leave them longer in unheated pits, so they are transferred to a cool house, and then the disfigurement begins, not because the house is an unsuitable one, but from mistakes in watering.

At this stage, although the soil is packed with roots, it is an easy matter to overwater, because very little growth is going on, and the days are often dull and cold; it is just that season of the year when a good waterer begins to change his tactics, preferring rather to err in the matter of under than overwatering. Yet some waterers, knowing that the plants are so abundantly rooted, fear to let them get slightly dry, and habitually give water a little too soon. The result is that many of the young white roots are killed, and the plant shows the check experienced by a slight rust at the edges of the leaves, and when this once comes it cannot be obliterated, but will often quickly spread. Now let us look at the other side of the matter.

In trying to avoid overwatering the plants are sometimes allowed to get too dry. A dull foggy morning is perhaps followed by an hour's bright sunshine, and plants which are dry at the roots would perhaps take little harm if the day were dull throughout, but the sunshine causes them to flag, and if not attended to quickly, roots in this case are also killed. But the after result is shown in a different way. The leaves become flabby and flag whenever the weather is bright, ultimately some of the bottom ones die and leave a leggy plant. The watering of *Cinerarias* is an art, which requires to be performed at the right time; neither too soon nor too late.

In the watering of plants in large pots more care is usually exercised, as the waterer is aware how quickly a fine specimen may be ruined by overwatering, consequently sufficient time is taken to thoroughly test each pot, whereas when dealing with a number of small plants the work has to be done quickly. There is this point, too, in favour of the large plants—viz., that as they are usually placed in their flowering pots early in the autumn their roots are active throughout the winter, yet as they have plenty of soil to work among they do not suffer to any great extent if sometimes allowed to become too dry; and as the space left for holding water is generally ample, a sufficient quantity can be given to thoroughly moisten the whole of the soil. These may appear small matters, but they are important enough to contribute largely toward success or failure.

Now for a few words about arranging the plants in their winter quarters. I like to place each on an inverted pot, as I find the extra trouble is well repaid; for although *Cinerarias* delight in an atmosphere uniformly moist, they do not like moisture lying upon the leaves during cold damp weather, and by raising the plants on pots the necessary moisture can be distributed on the stage without wetting the leaves, which if done is a fruitful source of another kind of leaf disfigurement—viz., damp. When *Cinerarias* are grown in light houses some means of shading ought to be in readiness by the beginning of March, or the leaves will flag badly during bright weather.

Fumigating should be practised occasionally even when no traces of green fly are visible, for when once it obtains a sure footing both the health and beauty of the plants are quickly marred. Feeding with liquid manures, both natural and chemical, should be regularly practised, always giving such in a greatly diluted form.

The beginning of March is soon enough to sow seeds for producing large plants in 9 and 10-inch pots, and the end of May for those intended for flowering in 5 and 6-inch ones.—H. D.

HYBRID POTATOES—REPORTING PROGRESS.

In your issue of March 17th, 1898, page 244, I gave you particulars as to how we planted out my "Jubilee" hybrid Potatoes in 1897. Their features were carefully noted, and the selected tubers from them I had planted out last mid-May. Their physiognomies became again watched, and the foliage kept peppered with the anti-blight powder. Thirty of them, early and second early, were selected, and taken up in the order of precociousness, and their characteristics for form, flesh, and colour noted down. I have retained seven of them as early and six second early varieties. None of the other seventeen—which proved very late rank growers, throwing enormous bunches of berries, and thus proving for me stamina, but the paucity and appearance of the tubers, to a practised eye, show them to be not worth keeping, and for that matter I do not care to introduce any more late sorts. I have, however, in every likelihood secured what I want with this Fendleri cross in early and second earlies: yet they do not even now bear sufficiently close "at home." In Dame Nature's good time I could correct this wandering tendency, and I find also to dispose of a disagreeable lingering flavour, always found in wildlings more or less, and also gain a little further increase in size for universal garden household purposes, albeit Mrs. Fenn says the representatives—allowing of course for the camera curtailments shown in the plate—are quite large enough for her. Nevertheless you will allow them to be a "triumphant" march over those two diminutives for which you bespoke a "report progress" on page 3, January 5th, 1893. I propose for myself in the future to persevere only in this way with wildlings from new latitudes, as I consider the acme of perfection for the esculent is arrived at; that I cannot work any further improvement by intercrossing with the original species or the American strains accruing from those of Virginia, Peru, or the Andes.

So now for my last comer, "*Solanum bulbo-castanum*, Duval (Guadalupe Old Mexico)," sent to me by my old corresponding American friend, Mr. Pringle. It is no new thing, "friendship with Americans," with me; *esto perpetua* with us all! You can quote more about the introduction of this new species, if you think necessary, from Mr. Pringle's letter on page 244, March 17th, 1897. Suffice it for me to show the growing appearance and the uplifted crop—save the mark, "crop"—by photographs, through a kind medium, Mr. Anderson, the same ingenuous youth who "took" the Chrysanthemums. You will perceive the foliage to be unlike any of our present edible varieties. Last year it gave its blooms from a tuber, the only one liliputian I could preserve. In the former season it blossomed from the seed sent to me, but up to the present it refuses to become cross-fertilised with my domesticated varieties; nevertheless, with the twenty-four years' tussle that I have undergone with the Fendleri from New Mexico, I do not intend to despair of conquering castanum from the other side of the Gulf of North America—viz., if I can maintain a fulcrum to arrive at an evolution of that inexorable law, the "survival of the fittest."

I fear, though, the investigations of a hybridiser will gain him little credit in connection with the esculent, if I may judge by the papers in these columns, since my last record in your issue of March 17th, 1898. Be this as it may, it will not prevent my customary anxiety to give you, before I "go under," my particular experiments, which must necessarily at first prove "small Potatoes, and few in a hill," and will certainly not meet the ideas of those large-minded growers who say they, or somebody else, can produce so many pounds from a single tuber, or an amazing plurality of tons per acre, thus hailing Nemesis to quickly fill their sacks and overstock the markets with inferior coarse produce, which—if it is to be judged of as a paragon of perfection to go by—will soon render for the growers very little profit indeed because of the over-abundance.

However, that may end, within the last twenty years or so, Potato raisers, by crossing, have followed in such yearnings for size as to offer a fair prospect of spoiling the esculent for all purposes excepting the idea of filling their breeches pockets, or for prize money. Relative to flowers, to work for size and admiration in competition can do no harm, but where is the benefit for the million to come in by creating bloated watery Potatoes—for is not the human system composed of three-quarters water already—and then to cross with these again to produce larger swollen obesities? A few years ago, as I was assorting some seedlings in the bay of my barn—one variety of them approached to the size of a child's head—our squire, Major Thoyts, happened to

call upon me about some parish business, and expressed his astonishment at the size of the one mentioned above, adding, "I suppose those are for the Messrs. Sutton's?" "No; they are to be boiled for the pigs—exterminated—as 'delusions and snares.' We do not want these monsters continued further than they have gone."

Agriculturists have gained a march upon us here by the extinguishing of the mountainous cattle for their shows, with which they erst used to "astonish the natives." It is high time the British public should be more considered in this way in regard to their vegetable food, in Potatoes more especially, for they take their place next only to Wheat. But we all know, or at least we read, how the last and most advertised are, according to the catalogues, the best. Notwithstanding, let me, if you can allow space, say somewhat about my own productions, which I have tried to keep to the fore, in regard only for substantial subsistence. They are the Rubens, Rembrandts, and Vandyks, analogously as being the original outcomes, handed down by long perseverance in cross-fertilising from the best blood, so to speak, of our good old English var., not to be procured now for love or money; and these, again becoming cross-pollen-fertilised from the choicest American sorts, produced for me the best Potatoes in the



FIG. 32.—A CHARACTERISTIC PICTURE FROM MR. FENN.

world. Those which we have succeeding them are after-interbred-cross copies, and do not surpass their progenitors for support or flavour; giants and colossuses, I grant.

Well, I never had a better yield from my Potatoes than last season, from off the same ground too where I have cultivated—excepting a few samples of recent raising—them from the consecutive seeds for twenty-three years; not that I disapprove of a change of soil or seed, just the contrary. Again, it would be impossible for me to obtain a transfer of tubers in their integrity of my out-of-commerce sorts; in fact, I never for my own seed let it out of my hands. You may be inquired of, "How do I manage, then, to cultivate so successfully, following on the same ground?" Answer: Analogous to Beau Brummel and his "cravats." Trenching and deep cultivation "is the man." I never care about expensive artificial manures; farmyard manure, soot and salt, burnt debris, old mortar, ashes, and earth closet soil as I can procure them are sufficient for me.—ROBT. FENN.

[We reproduce (fig. 32) the veteran's original Pea-like tubers from his S. Fendleri ×, with the progress up to date as represented in the tubers on the plate; also the inverted Seakale pot in which he grew them, the fork with which he dug them, and the bellows with which he blew the disease away by his favourite anti-blight. The writer, as he recently stated, has "just struck eighty-four." With the view to future improvements it will be noted he is going to start *de novo* with the "wildlings." We hope he may pass into history as the Potato centenarian.]



RECENT WEATHER IN LONDON.—Frosts have come daily of late, and have been comparatively severe. On Saturday, Sunday, and Monday mornings the white frost was accompanied by fog, which happily cleared later in the day. On each day there were gleams of bright warm sunshine, though the light wind was cold. Tuesday was foggy, but Wednesday opened clear and bright.

— WEATHER IN THE NORTH.—Cold winds from the east have been prevalent during the week, and generally the weather has been seasonable; sunshine fairly effective in tempering almost continuous frost. This has varied from 3° to 9°. A dense fog set in on Sunday evening; on Monday morning the hoar frost was intense, and 7° frost were recorded. The day was marked by hazy sunshine.—B. D., *S. Perthshire*.

— SHREWSBURY HORTICULTURAL SOCIETY.—The Honorary Secretaries of this excellent Society have favoured us with a copy of the report and balance-sheet for the year 1898. From a perusal of the former it is easy to gather that the executive body is thoroughly satisfied with the progress that has been made. This is only natural considering that after disbursing nearly £4000 there remains as the balance of assets upwards of £470. This must be most gratifying to everyone concerned, and to none more than Messrs. Adnitt & Naunton, who as Honorary Secretaries are indefatigable in their endeavours to maintain the standard that has been attained since the inception of the Society.

— MR. G. HARRIS.—As announced in the *Journal of Horticulture* two or three weeks ago, Mr. Harris was preparing to commence business on his own account when he was offered and accepted the appointment of Horticultural Instructor for the counties of Cumberland and Northumberland. For the last seventeen years Mr. Harris has been head gardener at Alnwick Castle, and during that time he has given ample proof of his ability as an able and an excellent gardener. Like all enthusiastic gardeners, Mr. Harris has been at all times not only willing but anxious to impart his knowledge to others, and by his unflinching courtesy and kindness has won for himself many friends and admirers. The garden staff to the number of thirty, wishful to show their appreciation of their chief, presented him with a beautiful, mounted aneroid barometer. Mr. Stewart, head foreman, most appropriately made the presentation. Mr. Harris was much touched, and feelingly responded, thanking them all for their great kindness.

— SHIRLEY GARDENERS' ASSOCIATION.—The monthly meeting of the above Society was held on the 20th inst. at the Parish Room, Shirley, Southampton. There was a good attendance. The lecture was under the auspices of the Technical Education Committee of the Southampton County Council, and was given by Mr. E. T. Mellor, B.Sc., London, Lecturer in Biology at the Hartley College, Southampton, the subject being "The Influence of Light on Plants," and was illustrated by experiments and lantern slides. Several questions were put and answered, and at the close a cordial vote of thanks was proposed by the President and unanimously accorded to Mr. Mellor. There was a good display of spring blooming plants by the members, and Mr. H. Curtis, gardener to the President, was awarded first prize for three vegetables, that being the only exhibit in the class.

— FRUIT CULTIVATION BY FARMERS.—At the Farmers' Club, Salisbury Square, Fleet Street, E.C., on Monday, February 27th, Mr. Spencer Pickering, F.R.S., gave a paper on this subject, which attracted a large gathering of members. All the principal points in relation to fruit-growing on farms were dealt with, and especial stress was laid upon the fact that more attention was needed than had hitherto been accorded from an agriculturist's point of view. Examples of the gross neglect so apparent in many districts were described and the remedies indicated. The extension of fruit culture by an arrangement between landlord and tenant was advocated, and the method which found favour with the lecturer was one by which the landlord provided the trees and the tenant incurred the expense of preparation, planting, and culture. A system of compensation was also recommended, the actual amount payable to an outgoing tenant being determined by valuation. A vote of thanks to the lecturer concluded the proceedings, after considerable discussion had taken place on the various aspects of the subject.

— NITRATE OF SODA.—A paragraph from "American Gardening" recently stated that "the amount of nitrate of soda to be employed to the square metre (39 square inches) is about 30 grammes," &c. Obviously there is a little mistake here, as the area of a square metre is 10·7 square feet, or over 1540 square inches.

— GARDENING APPOINTMENTS.—Mr. G. Gregory, late of Kingston Lacy Gardens, Wimborne, has taken charge of the gardens of Hazelgrove House, Sparkford, Somerset, for the Rev. A. St. John Mildmay. Mr. Maurice Jones, late head gardener to W. Cooper, Esq., Cockley Cley Hall, Swaffham, Norfolk, has been appointed in a similar capacity to H. Michell, Esq., Undermount, Bonchurch, Isle of Wight.

— DIVIDING LOBELIAS.—With a number of stock plants in a healthy condition they may be pulled in pieces, each with roots attached, and put an inch or two apart in boxes of light soil. Place in a brisk temperature, and syringe daily until established. These when well advanced in growth may be again divided if more plants are wanted. They soon become established in heat and moisture.—E.

— ORCHARDS.—At the meeting of the Bedfordshire Chamber of Agriculture on February 25th, a paper was read on the above subject by Mr. L. Castle, manager of the Woburn Experimental Fruit Farm, to a large gathering of members. The different methods of planting were reviewed at length; the general management of established orchards was also referred to in detail. An interesting discussion followed, in the course of which Mr. Crick, of Ampthill, remarked that his experience of forty years as a fruit grower coincided exactly with that set out in the paper, and he stated that he was so well satisfied with results that he was about to extend his plantation considerably. Several other members took part in the proceedings, and related their experiences, which had not, however, in every case been so satisfactory as Mr. Crick's. A hearty vote of thanks was accorded to Mr. Castle at the conclusion of the discussion.

— THE ROYAL GARDENERS' ORPHAN FUND.—At a meeting of the Executive Committee, held on February 24th, Mr. William Marshall was unanimously elected Chairman for the ensuing year. The following special receipts were announced, and the contributors heartily thanked:—Mr. Matthew Todd, Maitland Street, Edinburgh, £33; Mr. H. J. Jones, Ryecroft Nursery, Lewisham, S.E., £15 4s. 6d.; proceeds of a concert organised by the Chislehurst Gardeners' Improvement Association, per Mr. J. Lyne, £17 10s.; J. Colebrook, Esq., Lowndes Square, S.W., £10 10s.; W. Roupell, Esq., Roupell Park, S.W., £5 5s.; Leeds Paxton Society, £3 5s.; Messrs. J. Moss and Son, Kelvedon, £1 1s.; Messrs. W. Thomson & Sons, Ltd, Clovenfords (collecting box), £2 12s. 3d.; Anderton's Hotel (collecting box), 10s.; Mr. Wm. Howe, Park Hill Gardens, Streatham, S.W., £1; and Mr. William Whittaker, Bridgwater, 10s. An intimation having been received of the death, prior to the annual meeting, of one of the orphans on the elected list, the Committee unanimously resolved to place Arthur George Wood, the next highest unsuccessful candidate at the late election, on the Funds as from February 17th. It is specially requested that all communications relating to the business of the Fund may now be addressed to the Secretary, Mr. B. Wynne, 8, Dane's Inn, Strand, London, W.C.

— HESSLE GARDENERS' SOCIETY.—A meeting of the above Society was held on Tuesday, February 21st, when Mr. F. Mason presided. Mr. J. P. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, read an instructive and valuable paper on Potatoes, their culture and variety. The essayist first dealt with the history, then with the advancement made in the mode of culture, describing how at the present time more Potatoes were produced from a decreased acreage than formerly. He dealt with the diseases the plant is subject to, also describing various remedies, and finally giving the varieties he found best to answer his own requirements. The usual votes of thanks brought a pleasant evening to a close. The sixth annual dinner of the above Society was held on Thursday, the 23rd inst. W. J. Wharwick, Esq., presided, and was supported by all the officers and about sixty members and their friends. The loyal and other toasts were duly proposed and responded to, and, amid much enthusiasm, "Our Journal" was responded to by Mr. Donoghue of Tranby Croft. By the generosity of the President the famous Kingston Quartette party was present, and interspersed the toasts with various vocal items, Mr. Thompson, who provided the comic clement, coming in for a large share of applause. Kindred societies were represented by Messrs. Winns and Schofield of Grimsby. Everything passed off quite satisfactorily, and a highly enjoyable evening was spent.—J. T. B., *Hessle*.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1899.										
February.										
Sunday ..19	E.S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday ..20	E.N.E.	42.9	42.9	52.3	37.2	—	42.6	44.2	45.6	30.8
Tuesday 21	E.N.E.	45.2	43.9	46.6	42.5	—	44.0	44.3	45.7	40.3
Wednesday 22	E.S.E.	42.9	40.1	45.6	41.1	—	43.6	44.5	45.6	36.5
Thursday 23	E.N.E.	41.8	37.8	48.9	35.5	—	41.5	44.5	45.6	25.0
Friday ..24	S.E.	34.6	33.5	53.3	32.0	—	39.6	43.6	45.6	19.5
Saturday 25	N.E.	27.8	27.8	51.9	26.2	—	38.6	42.9	45.6	18.0
		33.0	32.8	42.6	27.0	—	37.8	42.2	45.3	18.8
MEANS ..		36.5	35.8	48.0	36.2	Total	40.9	44.0	45.5	29.1

No rain has fallen since the 15th; the temperature has been steadily going down, and the wind has varied between N.E. and S.E. Fog has been prevalent, being very dense on the 24th and 25th.

— FRAGRANT FREESIAS.—It will be remembered by many readers that in our issue of January 5th, page 12, were some practical notes from Mr. G. Carpenter, West Hall, Byfleet, on Freesias and their culture. As illustrative of the suitability of his methods of procedure, Mr. Carpenter now sends examples of flowers and foliage, than which for substance and richness of fragrance no one need wish better, and it is all too seldom we see them equally as good.

— PETUNIAS.—Now that seed stocks give of double varieties such wonderfully fine flowers, it is a matter for surprise that these plants are not more generally seen as pot plants both in the conservatory and at exhibitions; not only have the flowers high class form, but generally the petals are pleasingly fringed, and the colours are charming. I was recently looking over a large collection of plants of Sutton & Sons' strain, and the grower said that from seed 50 per cent. at least came finely double. That is a good return for the small cost of a packet of seed, especially when it is remembered that all the best can be easily propagated by the aid of cuttings, and be thus perpetuated. Plants from autumn rooted cuttings grown in 7-inch pots, and occasionally pinched to make them bushy, develop into fine plants, and make for a long season a beautiful display, and are most attractive as exhibition specimens.—A.

— CAMELLIA ROSEIFLORA.—The beauty and usefulness of Camellia japonica and its varieties as garden plants is probably responsible for the fact that other species are more or less overlooked. Some of these, though of no use for cut flowers, are worth a place among greenhouse plants, as they flower well in a small state, and make a change among ordinary plants at this time of year. The plant under notice is a Chinese species, with glossy green ovate leaves $2\frac{1}{2}$ inches long by an inch across. The flowers are borne several together in great profusion, plants 2 feet high often bearing from fifty to 100 or more blossoms. They are rosy pink in colour, semi-double, and about 1 inch across. It flowers annually in the temperate house at Kew, where it is much admired. A figure of it is given in the "Botanical Magazine," t. 5044. Being of easy cultivation there is no reason why this plant should not be added to the collections of people who are fond of variety among greenhouse or conservatory plants.—W. D.

— RAISING CANNAS FROM SEEDS.—I thought just at this time when many, no doubt, are purposing to use Cannas for bedding a hint as to raising them might be of use to some readers. It is often suggested soaking them for, say, twenty-four hours. On March the 1st of last year I put some seeds in a bottle and stood them on hot-water pipes in a vinery, and occasionally removed those that were comparatively soft, placing them in small pots. I tested them on the flagstones by holding them about 6 inches from the floor and letting them drop. If they were still hard I put them back in the water. The others remained until April 20th, when I became impatient, and took out all and cut off the hard outside on one side of the seeds sufficient to see a small white speck. Then they were put in pans in brisk bottom heat, all being through the soil in from five to ten days of the date of sowing. I raised about 100 last year in this manner, and flowered them in four months from the time of soaking. This is the second season I have adopted the plan with success.—R. BARFOOT, Mayfield Gardens.

— LIVERPOOL HORTICULTURAL ASSOCIATION.—Mr. H. Sadler writes:—"I have been requested by the Committee of the above Association to draw your attention to the report of our annual meeting which appeared in a recent number of your paper, in which it was stated that the balance in hand at the close of the year amounted to £80. I enclose you account showing that this is an error, the amount being £120." We gladly make this correction.

— RECORD CYCLAMEN.—Noticing "Wanderer's" remarks (page 145) on Mr. W. James's fine collection of Cyclamen at Farnham Royal, I thought perhaps your readers would be interested in what I believe the finest Cyclamen plants ever exhibited. They were shown at the Brighton horticulturists' monthly meeting, February 16th, by Mr. C. Murrell of Franklands, Burgess Hill, and were awarded the first prize and the Society's certificate. The plants in question carried about 150 finely developed flowers each, and measured just over 2 feet across. What about silly Sussex?—A. G. D.

— TREES FOR CITY STREETS.—Of all trees those which are found to do best in the murky atmospheres of great cities are the Planes. The reason of this is that the Planes possess the characteristic of peeling off their outside bark at regular intervals, so that they are continually presenting fresh surfaces, as it were, to the destructive agencies playing upon them. The great cause of the failure of trees in cities is the clogging of the little openings on their surfaces with particles of soot and other deleterious substances found floating in such smoky atmospheres. The saturation of the soil with coal gas and other noxious compounds is also a fruitful cause of failure.—("Irish Farmers' Gazette.")

— READING GARDENERS' ASSOCIATION.—By the aid of limelight views, and under the guidance of Mr. C. H. Curtis (an old Kewite), a large number of members of the above Association spent a pleasant evening at the club room of the Old Abbey Restaurant in inspecting the houses and grounds of Kew Gardens. Before separating the President of the Association, C. B. Stevens, Esq., proposed a vote of thanks to Mr. Curtis for coming to Reading and giving the members an insight to Kew Gardens without having to go to Kew, and referred to the interesting way in which the ramble had been conducted, showing that their guide had a thorough grasp of the subject and an excellent acquaintance with the ins and outs of this noted educational establishment.

— HISTORY OF THE LONDON PARKS.—It is announced that a work of great interest to Londoners, written by Colonel Sexby, will be published in a few months by Mr. Stock. The book is a history of the London parks, gardens, and other open spaces under the supervision of the County Council, or otherwise available for public recreation. It will be a striking record of municipal progress in a humane direction. But besides this, the history of many of these parks and gardens forms an attractive chapter in the general history of political, social, literary, and artistic London. Colonel Sexby will tell us about the famous personages and events associated with the London parks and gardens, and the once famous buildings that stood near or upon them. The author's duties in the London County Council have made him familiar with all details of his subject. The work will contain a very large number of illustrations and plans from old and modern sources.

— THE SOIL.—What a change in the condition of the ground and its working has been wrought in a week under the influence of dry sunny days, with north-easterly winds, and white frosts at night. At the moment of writing, after a week of such weather, the soil is in splendid condition for working, for sowing and planting. How rapidly the evidences of rain have disappeared, and with the dust flying in our streets and roads as though it were March, it is so difficult to realise that but a few days ago and all seemed in danger of being flooded with overflowings consequent upon the heavy rains. Anyone who assumed that we were having too much rain can hardly think so now—indeed, many rather desire that we may have many falls ere the summer is with us. But the dry weather, in thus permitting time for the water to get away and the soil to become so admirably workable, has done much to stimulate labour in gardens, and whether early or not very many, especially where the soil is naturally porous, are sowing, besides Peas and Beans, Parsnips, Onions, Carrots, and other seeds, the state of the soil and the weather proving to be so tempting. Whether in doing so thus early they are wise subsequent weather will show. It does not do to jump to the conclusion that the winter is gone. We have yet to face the treacherous month of March, and we may have through it some severe weather. If it keeps dry, and the temperature is but moderately low, we shall have much to gain in keeping things in check. Already there seems to be on the part of trees and bushes too much premature movement that is not welcome to the gardener.—OBSERVER.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—FEBRUARY 28TH.

As might naturally have been expected, the meeting at the Drill Hall on Tuesday was a very small one. The heavy fogs and sharp frosts of the preceding days would materially prejudice the exhibits. Those staged were of an interesting character, and of excellent quality.

FRUIT COMMITTEE.—Present: George Bunyard, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. J. Willard, J. Smith, F. Q. Lane, Geo. Wythes, S. Mortimer, P. C. M. Veitch, A. H. Pearson, E. Shaw Baker, W. Poupert, Jas. Veitch, Jos. Cheal, Robert Fife, and A. Dean.

Mr. H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth, exhibited a dish of Apple Rouen. Messrs. R. Veitch & Son, Exeter, sent a dish of Mannington Pearmain in good condition from the original tree, also roots of Sandwich Island Salsafy. Mr. R. C. Notcutt, Broughton Road Nursery, Ipswich, sent two dishes of stewing Pear Winter Orange in very fine condition.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); and Messrs. Geo. Paul, R. Dean, Wm. Howe, J. Hudson, J. F. McLeod, J. Jennings, C. T. Druery, C. J. Salter, T. Peed, H. Selfe-Leonard, W. Bain, J. D. Pawle, C. R. Fielder, J. Walker, C. E. Shea, E. T. Cook, H. J. Cutbush, Harry Turner, J. Fraser, J. W. Barr, and E. H. Jenkins.

Messrs. Wm. Paul & Son, Waltham Cross, staged a very handsome collection of flowering shrubs, comprising good specimens of Forsythia suspensa, capital plants of Prunus triloba beautifully flowered, the double Almond, the Carnation-flowered Peach with bright rosy red flowers, the Camellia-flowered Peach, and a number of foliage plants, such as Euonymus, Golden Privet, and Aralia Sieboldi (silver-gilt Banksian medal). Mr. F. Miller, 110, Fulham Road, contributed a bright display of Cinerarias of a dwarf type, also a floral display of various devices composed of spring flowers (silver Banksian medal).

Mr. Purnell-Purnell, Woodlands, Streatham Hill, staged a large collection of Narcissi and Cinerarias. The former were well represented by N. rugilobus, N. poeticus, N. Leedsi, Purity, Emperor, Empress, and Horsefieldi. The Cinerarias were dwarf and sturdy, but the plants were barely ready (silver Flora medal). Messrs. Paul & Son, Cheshunt, contributed an interesting collection of Hellebores and white Lilacs. The former included Helleborus colchicus coccineus, H. Willie Schmidt, H. roseus superbus, H. caucasicus punctatus, and H. orientalis; also a number of other spring flowering plants.

The St George's Nursery Company, Hanwell, contributed a grand display of Cyclamens in a great variety of colours. The plants were remarkably well grown and covered with bloom (silver gilt Banksian medal). Messrs. Sander & Co., St. Albans, exhibited a large plant of Acalypha Sanderi and a number of A. Godseffiana, also a fine specimen of Hippeastrum procerum with pale blue flowers. Mr. John Russell, Richmond Nurseries, Richmond, exhibited baskets of Laurustinus albus; the plants were well flowered and pure in colour—also baskets of Hedera arborea fructo-lutea and Skimmia Fortunei well berried.

Mr. T. S. Ware, Ltd., Tottenham, exhibited a very pleasing display of spring flowers. The Daffodils were excellent, and comprised N. bicolor Victoria, Emperor, Sir Watkin, Leedsi, Horsefieldi, and Burbidgei, pots of Iris reticulata, Fritillaria oranensis, blue Primroses, and hardy Cyclamens. Messrs. J. Veitch & Sons, Ltd., exhibited plants of Amygdalus persica magnifica. The flowers are a bright rosy red, and formed a very attractive exhibit; also plants of Primula floribunda. Lady Margaret Boscawen, Tregyne, Cornwall, contributed some very fine bunches of Neapolitan and Marie Louise Violets, the colour being perfect and the flowers a good size. Messrs. Barr & Sons, King Street, Covent Garden, staged excellent Daffodils, N. Victoria, Golden Spur, incomparabilis, Beauty, Captain Nelson, and a number of minimus; also Lachenalias Nelsoni and pendula. The quaint Iris tuberosa, hardy Cyclamens, and a few Primulas and Cinerarias were also sent.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); and Messrs. J. O'Brien, de Barri Crawshay, J. Colman, N. Cockson, H. Little, A. Outram, H. J. Chapman, F. J. Thorne, W. Thompson, E. Hill, F. Mason, H. Ballantine, J. Douglas, T. B. Haywood, T. W. Bond, and H. T. Pitt.

Mr. F. Knight, Thundersley Hall, Thundersley, Essex, contributed a small group of Lælia superbiens, Odontoglossum Rossi majus, Brassavola glauca, and Cattleya Trianae (bronze Banksian medal). Messrs. H. Low and Co., Bush Hill Park, exhibited a collection of well-grown Orchids carrying flowers of good form and rich colour. Varieties of Cattleya Trianae were conspicuous, as were Cyrtopodium Sanderæ, C. Boxall atrata, C. i. Dormani, Dendrobium Wardianum, D. Findleyanum, D. Phalenopsis, Lælia harpophylla, Odontoglossum crispum, O. Andersonianum, and others (silver Banksian medal). Mr. A. Kitwell, gardener to D. M. Grimsdale, Esq., Uxbridge, showed Cyrtopodium villosum aureum and Mastersianum, with Odontoglossums luteo-purpureum sceptrum, triumphans, and maculatum. J. Rutherford, Esq., Blackburn, staged a good form of Cattleya Trianae named Rutherfordiana.

G. Thompson, Esq., Stamford Hill, showed Dendrobium nobile var., while Mr. F. J. Thorne, gardener to Major Joiey, Sunningdale, sent Dendrobium atro-violaceum and Lycaste Lingwilia. De Barri Crawshay, Esq., Sevenoaks, exhibited Odontoglossum Ruckerianum Crawshayanum, O. Andersonianum Bogardiana, and O. Rossi Crawshayanum. Sir William Marriott, Bt., Blandford, showed Sophro-Lælia Marriottiana; and Mons. Jules Hye, Ghent, sent Odontoglossum Franz Mazerell. Messrs. J. Veitch & Sons, Chelsea, were represented by Phalenopsis Ariadne, Hebe, and F. L. Ames. Mons. C. Maron, Brunoy, France, sent

Lælia Cattleya callistoglossa J. Leemann, Cyrtopodium tonkinense, and Lælia-Cattleya Ernesti Princess Olga.

From Mr. J. Edwards, gardener to G. S. Clark, Esq., Wrexham, came Odontoglossum Rossi majus rubescens, O. crispum Mrs. Stanley Clark, and a hybrid Cyrtopodium. Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, Staffs, showed Odontoglossums Wilckeanum concinnum, O. excellens spectabile, O. coradenia expansum, O. crispum Daphne, and O. c. Dorothy (silver Banksian medal). Messrs. W. Shaw and W. Gould, Stockport, showed one or two plants each.

CERTIFICATES AND AWARDS OF MERIT.

Cyrtopodium Surprise Hybrid Albino (Jules Hye).—This is pale green with a yellow suffusion in the pouch. The dorsal sepal is grass green with a broad pure white band (award of merit).

Lælia-Cattleya Ernesti Princess Olga (C. Maron).—A superb flower. The colour is of the brightest canary yellow except the centre of the lip and throat, which is crimson (first-class certificate).

Lælia-Cattleya callistoglossa J. Leemann (C. Maron).—This is in all respects an advance on the type (first class certificate).

Odontoglossum Ruckerianum Crawshayanum (de Barri Crawshay).—A distinct form. The sepals are rosy purple with chocolate patches, and of similar colour in the petals, but with spots instead of patches. The lip is creamy white with a large chocolate red central patch (award of merit).

Odontoglossum Cookeanum (H. Ballantine).—A striking though small flower. The prevailing colour yellow, barred and spotted with chocolate brown (award of merit).

Odontoglossum Vuylstekianum, The Dell var. (H. Ballantine).—This is a lemon yellow beautifully fringed form of the type. The sepals and petals have large spots (award of merit).

Prunus persica vulgaris alba flore plena (W. Paul & Son).—This is a fine variety with pure white semi-double flowers (first-class certificate).

Rhododendron Exquisite (J. Veitch & Sons).—A lovely variety, with pure yellow flowers and bright red stamens (award of merit).

Rhododendron Hercules (J. Veitch & Sons).—A handsome form, with flowers of an orange buff colour. There are occasionally six and seven segments (award of merit).

HEREFORDSHIRE FRUIT GROWERS'

ASSOCIATION.

A WELL attended and influential meeting of fruit growers and farmers was held at Hereford on Wednesday, 22nd February, for the purpose of starting a Fruit Growers' Association for Herefordshire. The Mayor of Hereford presided, supported by Sir James Rankin, M.P., Mr. C. W. Radcliffe Cooke, M.P., Mr. J. Riley, and Mr. Beddoe.

Sir James Rankin, M.P., proposed that an association be formed, and that it be called "The Herefordshire Association of Fruit Growers and Horticulturists." He considered the county of Hereford had much to recommend it for fruit growing, and that unless the members of the Society combined in earnest no amount of talk would avail. Small fruits, he was sorry to see, had decreased in cultivation. He alluded to the work of the Technical Instruction Committee, of which he was the Chairman, and said the Secretary would do all he could to promote the objects of the Association. Cottagers should be encouraged to grow fruit. A tenant of his had made £20 a year profit from three-quarters of an acre of land. Foreign competition must not be lost sight of.

Mr. J. Riley seconded the resolution. He alluded to some of his failures in fruit culture during the past twenty years, and remarked that, if an association similar to what he understood it was proposed to start, had been in existence twenty years back, failures and much needless expense might have been saved him. The railway companies had the power to make or mar the English fruit trade, and an association of several hundred members stood a far better chance of treating with a railway than an individual did. The resolution was then put and carried.

Mr. Radcliffe Cooke, M.P., then proposed the comprehensive resolution of the various objects of the Association. After enumerating same, he proceeded to say he was quite in favour of such associations, as for years past he had endeavoured to persuade the Government to encourage and assist fruit culture, and, if possible, to follow the example of the Canadian Government, who had five experimental fruit farms; these were of great benefit to those who wished to start fruit growing. Whenever he had made the suggestion he was met with the retort that it was not a matter for the Government, that it must first be taken up through the energy and enterprise of the people themselves. They were now in Herefordshire going to give a practical illustration of that doctrine—they were going to take the initiative themselves. Mr. Long had told him that if an experimental farm were started for, say, the counties of Gloucester, Worcester, and Hereford there was no doubt the Government would give a grant. The farmers and growers must, however, make a beginning themselves. He alluded to the immense area that used to be under fruit in Herefordshire in the seventeenth century.

Mr. Beddoe seconded the resolution, which was then put and carried.

The Mayor then proposed, seconded by Mr. Allen, that Sir James Rankin, M.P., be asked to become President of the Association, which resolution was agreed to with applause.

After this a Committee was proposed and agreed to. At the conclusion of the meeting over fifty of those present became members of the Society.

SEASONABLE HINTS ON FLORIST FLOWERS.

WHAT an extraordinary season this is through which we are now passing—somewhat similar, indeed, to last year, but more favourable in its character with regard to gardeners, inasmuch as we have had in this south-eastern part of England a fair supply of that rain of which we were so deficient in the early part of last year. Of frost and snow we have had none, never more than 3 or 4 degrees of the former and only a few flakes of the latter. Some of our days have been more like spring than winter, and now that we have passed more than half through the month of February we begin to think that the winter is gone. We may have a rude awakening yet; but now already our borders are gay with Crocuses, Scillas, Aconite, hardy Cyclamens, Anemones, and Snowdrops, and how delightful to us all these early flowers are; but what effect has this strange season had upon our florist flowers?

Take, for example, the Auricula. I do not see that they are one bit more forward than in ordinary seasons, nor have the winter and autumn trusses been more abundant than usual. Some sorts there are which are always inclined to commit this mistake, and whether the season be early or backward makes little matter to them. We have had no trouble about covering up our frames or pits, and it is too early yet to determine whether the flowering season is likely to be an early or a late one. As far as my judgment goes, the culture of the Auricula for exhibition purposes does not seem to increase very much; the flower is not a popular one, although those who are really interested in its culture are devoted to it. At the present time the great object of the grower is to see that his plants are clean—that is, free from green fly, and none of them water-logged. If any of them have been unfortunate enough to have been under a drip they ought to be examined at once; it may possibly be that a worm has got in and disarranged the drainage; this can be ascertained by turning the pot up upon the hand, and if the intruder be found he will have little mercy shown to him.

Of late years the desire for decorative plants has led to what are called fancy varieties being more cultivated. These are showy, free flowering, and many of them very bizarre in character; but of course they do not find favour with the old florists, who like myself were brought up in a very strict school, where any departure from the established rules of criticism was resented. One would advise growers now to get in any new sorts, but as far as florists' varieties are concerned these are very few, for you cannot propagate the Auricula as you do many things—you must depend upon its power of giving offsets, and in many cases these are very sparingly produced. The character of the weather at the present time is most favourable for giving them air on all occasions, taking care, however, that they are preserved from rain.

CARNATIONS AND PICOTEEES.

The season has also been most favourable for these, and I have no doubt that those who grow them in the open during the winter have found it to be so; but as I grow but few I never venture to expose them, but keep them in pots during the winter, and in looking at mine now I find them in the most healthy condition, no spot or appearance of fly, but with good green healthy foliage. This is another flower in which there has been a vast change of taste. This has arisen from two causes; the overdressing of the old florist varieties made it very disappointing for anyone who saw a stand of beautiful flowers arranged, and then tried to grow them, to find out that unless he possessed the art of dressing them he had no chance whatever of equalling the flowers he had seen; and here again the wish to have more decorative flowers in greater quantity made a great revolution in public taste. This was greatly encouraged by the wonderful success that attended the earnest labours of Mr. Martin Smith in producing what may be really called a new race; from his seed we have flowers of the most varied hues, good form, large size, and great fragrance. He distributed these seeds liberally to members of the National Carnation and Picotee Society, so that in all parts of the country we see the results of his efforts. As border plants they are invaluable, producing large quantities of good flowers, and so making a great effect. There is now no longer need of carefully watching over a plant or two, which, after all, might refuse to grow; we can get plenty of foliage and strong layers. As the days advance the plants will require more water until the time for planting out, but it had better not be overdone, and air should be given on all possible occasions. Towards the end of the month I take my plants from the pits or frames and place them out of doors under a shelter where they are protected from wind and rain but have air upon all sides. This hardens them, so they are in a better condition to plant out by-and-by.

GLADIOLI.

The beds ought now to be carefully forked over when the weather is fine to get ready for planting, though it is too soon for that yet. When large quantities are grown the small corms and seedlings should

now be planted, but the larger ones must be kept in safe position until April. I notice that the corms of the Lemoinei group are very strong, and do certainly seem to be hardier than those of the gandavensis section, although neither have yet made their appearance above ground.

PANSIES.

I suppose that in the South of England we must confine our attention to growing these plants in pots; our hot and dry summers make sad havoc with them when planted out of doors, they become infested with mildew and the plants perish altogether. I therefore of late years have never grown them except in pots. It is advisable now to stir up the soil with a blunt stick and tie the long straggling shoots to almost invisible stakes, for the beauty of the blooms is greatly marred when the shoots hang about in all directions. Here again a great change has taken place. The show varieties, as they used to be called, are very seldom met with; the Fancy or Belgian varieties, as they are called, though mostly mixed in this country now, have entirely superseded them, and yet when the late Mr. Charles Turner wrote his little treatise on the Pansy Fancy varieties did not exist. It is to the Scotch growers—Laing, Downie, Laird, Paul, Dobbie, and others—that we are indebted for the large and showy varieties which we now possess. To see them in perfection you must see them growing in Scotland or in the North of England.

RANUNCULUSES.

No flower, I think, has suffered by the change of fashion more than the Persian Ranunculus, yet what could be more beautiful than a bed of these exquisitely formed and most varied flowers, ranging through almost all shades, except perhaps blue? I remember the time when a single tuber was catalogued at half a guinea, and yet as far as I know these are nowhere to be had now; the Dutch florists still keep up a large collection, but I cannot find amongst them those varieties that used to please one in earlier days. You get much larger flowers, but they very soon show the eye, and then all their beauty is gone. I have managed to get enough roots to plant a large bed, which I hope to do in the course of a few days. They should be planted about $1\frac{1}{4}$ inch under the ground, the rows 5 inches, and the roots to be placed 4 inches apart in the rows. All worms should be, if possible, taken out of the bed, for they have a very unpleasant practice of getting under the tubers and throwing them out of the ground. After the bed is planted it must be very gently smoothed down, but not with the rake. There is a class which is called French varieties, but they lack the perfect form and symmetry of the older kinds.—D., Deal.

PYRETHRUMS.

WHAT wonderful strides have been made of late years in these useful hardy herbaceous perennials, and no small meed of praise is due to those painstaking hybridists. Messrs. Kelway & Son of Langport, for the most beautiful varieties that from time to time make their appearance. The uses to which Pyrethrums may be put are almost innumerable, but certainly dotted about in clumps in the border they look charming, and with a little judicious attention regarding varieties, we have a blaze of colour when the larger herbaceous flowers are somewhat scarce.

From the middle of May to the beginning of July they are greatly in evidence, and with good cultivation the yield of bloom is enormous; and being able to be cut with long stems, the variety of floral work to which they may be adapted is almost endless, and one would like to see them grown in greater profusion.

Regarding their successful culture, there are few plants that require so little to bring about a good return, as even in the commonest of soils a profusion of flowers is the result. But it is when sound loam and well-decayed manure are thoroughly mixed, and supplies of liquid manure given during the growing season, that the quality of flower and robust appearance are manifested. Timely attention to staking is also essential, as, although the blooms seem scarcely to suffer from the rain, yet if allowed to touch the soil they soon get damaged. The requirements to insure a second crop of flowers in the autumn is after flowering to cut down the old stems and to remove a little of the surface soil, replacing by new material, making all firm. If the weather is dry give heavy supplies of water. The new growths will soon make their appearance, and it is from them that a watering with liquid manure twice a week will work wonders in the size and profusion of the flowers obtained.

The season of planting may be said to extend over a very long period, but the present cannot well be improved upon, and an early purchase will insure happy results. Where so many seedlings abounding in beautiful colours can be purchased at a moderate cost I will not attempt to speak of the selected named sorts which are catalogued, and which ought to find a place in all large establishments. Suffice it to say that purchasers may have the choice of either double or single varieties, and I should strongly recommend both, in colours varied from the choicest selfs to almost every conceivable intermediate shade. The single varieties are charming for house decoration, the yellow eye noticeable all through being a fine set off against the coloured petals.—R. P. R.

VIOLAS, NEW AND OLD.

PERHAPS at no period in its history has the Viola of our gardens been so popular and widely grown as at the present time, and this popularity, fortunately, is not confined to gentlemen's gardeners, but is spread amongst amateur gardeners in all parts of Britain. This love of the Viola has encouraged specialists to raise and distribute every year enormous quantities of new varieties; nearly every grower has a new sort which has (in his eyes) some outstanding quality better than his neighbour. This is all very well if he keeps his gems at home, but if all that are offered were sold at 2s. 6d. each to all other lovers of the flower, it would mean bankruptcy to some of them. With the view of affording beginners some reliable information on new and old varieties, I went through an extensive collection when the plants were in bloom and noted those most suitable for showing, bedding, and affording flowers for cutting.

SUPERIOR NEW VIOLAS.

Blue Border.—Dwarf, sturdy habit; free-flowering; purple edge, white centre; good for show or bedding purposes.

White Hart.—Not a pure white, has a slatey tint through it; is a first-rate bedder.

Lord Malcolm.—A purple self, very strong yet sturdy grower; splendid for showing in sprays, but not free-flowering.

Romeo.—Not of robust habit, but is a delightful flower; purple striped with white and pink; a novel colour.

Jeannie P. Robertson.—White margined with lavender; a chaste flower, rather tall grower; a beauty for exhibiting.

Juliet.—Grand foliage, very strong grower, purple and white, like the old and well-known Countess of Kintore, but much better; excellent for show or bedding.

Alida.—White edged with mauve; a very compact growing variety, free flowering, and the flowers have the merit of having long stems, therefore are suitable for table decoration.

GOOD OLDER VARIETIES.

Duchess of Fife, primrose edged with blue, is still one of the best, especially for exhibition. Duchess of York is a fine white. George Lord, primrose and rayless, is suitable for any purpose. So is Flower of Day, cream colour.

J. B. Riding, a deep mauve, has a fine habit, and is first-class for show or bedding. Hamish, crimson and purple, is fine for showing, the flowers being large. Hamlet is one of the most novel colours I know, rich crimson and scarlet flaked with purple and pink, large flowers; a splendid show flower. Iona is another fine flower, either for show or bedding; first-class habit, free flowering; the colour is blue-black and lavender.

Prince of Orange, very deep yellow, is a capital bedder. Princess Louise, pale yellow, excellent habit. Pembroke is rather tall, but the flower is very fine indeed. Norah May is a pale lavender; a large, chaste, and beautiful flower, useful for any purpose.

Princess of Wales, a rayless yellow self, forms very compact tufts. Sylvia is a rayless primrose flower and fine bedder. Mrs. C. F. Gordon, lavender blue, a good show flower or bedder. Stobhill Gem is very similar. Princess Ida, rosy heliotrope, is fine for show or bedding. Mozambique is similar to Mrs. Gordon but not so good. Marchioness, a fine creamy white self, is a prolific bloomer, and one of the best for bedding. Rosa Pallida, a dwarf grower, pale lavender, is very effective in line and beds.

Mrs. J. Donnelly is a real bedding Viola, being of flat growth and extremely floriferous. White Duchess, a light sport from Duchess of Fife, is very chaste. Royalty is a fine bedding yellow, so is the dwarf growing large-leaved Lord Elcho, which, though old, is very good and reliable. Jessie Prestwell, white striped with rose and purple, is a lovely show flower. Archie Grant, a large blue flower, with fine foliage, is still one of the best of all bedders.

A. J. Rowberry is one of the finest yellow Violas yet raised—a smooth rayless flower, good for any purpose. Cecilia, creamy white edged with pink, is a splendid show flower. Dandie Dinmont, purple, is good for exhibition only. Florizel, bluish lilac, fine free growth; a beautiful variety. Edina, dark blue with white markings, fine for bedding or show. Devonshire Cream is an excellent show flower; and Favourite a grand bedder of good habit. Mrs. Charles Turner is a first-rate bedding blue; so also is True Blue, raised by the late Mr. Wm. Dean, who always maintained it was the best bedding blue Viola grown—and it is one of them.

Of the sweet-scented tufted Violettas there are many varieties, none however surpassing the original creamy white, "Violetta." This makes a delightful edging to any bed, and should be left undisturbed for some years. Gold Crest, deep golden yellow, and Oliver, a blue self, are also good; so is Picotee, a striped variety.

To succeed with Violas they must be well cultivated. They are not particular as to soil; but it should be deeply dug, and have a generous admixture of good well decayed manure. One very essential

point, too, is to plant early, especially in the South of England; late planting is simply courting failure. As soon as the ground is in any thing like good condition the plants should be put in, say, the second week in March, and in May, if at all possible, they ought to have a mulching of some sort. If Violas can be left for two or three seasons undisturbed and well looked after, glorious displays are the result; not show flowers perhaps, but, better than that, plenty of show in the garden.—VIOLA.

FLOWERING PLANTS FROM SEED.

MANY useful plants for cutting and decoration may be readily grown from seeds. At the present period of the year nearly all seed which is sown should be sown in pans or boxes which can be placed in heat, as by this means germination is more quickly insured, and the seedlings make considerable headway in time for transplantation into other boxes or a slightly heated frame where they are able to become strengthened prior to being planted out finally.

Marguerite Carnations quickly germinate now. Sow on the surface of light soil placed in boxes or pots, and cover the seed lightly with fine soil.

Lobelias for bedding are easily grown from seed. Wide, shallow pans are the best. Give ample drainage, and fill with a mixture of light loam and leaf soil, making the surface fine and smooth. Distribute the seeds as evenly as possible, and dredge a mere covering of soil or fine sand over them through a sieve. Place in a little bottom heat and cover with glass and paper. The seeds soon germinate, but great care must be taken with the seedlings to prevent their being spoiled with too dry heat or excessive sunlight.

Campanula pyramidalis can be raised without heat, but it is an advantage to sow the seeds at once in pots of moist soil and place in gentle heat. After germination expose to light in a cool house and transplant the seedlings early, later on potting them singly. These plants do not flower the first season, but it is a distinct gain to enable them to have a long season of growth, with several repottings, so that the plants may be strong for flowering finely the next season.

Pentstemons may now be produced from seed, and the plants resulting will, with good and liberal treatment, flower the same season. Fill a wide seed pan or shallow box with good loam and leaf soil in a moist condition. Make firm and level, and sow the seeds thinly, just covering with fine soil. Cover with glass to prevent evaporation. A slight bottom heat will be enough to give the seeds a start, and when the seedlings have appeared above the soil raise the receptacle close to the glass in a warm house. When large enough to transplant give them more room in other boxes, from which they may be finally planted in a position for flowering.

Antirrhinums when raised early appreciate a little heat, but after germination has well commenced give a cooler position. Any light open mixture will suffice, making it fine on the surface, as the seeds are very small. Merely dust over them a light covering of soil or sand. Prick out the seedlings an inch or two apart in boxes or a frame, so that they may enlarge and strengthen for the final planting. The dwarf varieties should be sown and grown separately from the tall.

Verbenas are bedding plants which can be grown from seeds as well as from cuttings. Place some good light soil in boxes and sow the seeds thinly on the surface, which should be moistened previously. Cover the seeds with a thin layer of soil. When the seedlings have attained sufficient size prick them off into boxes or pot singly.

Primroses and Polyanthus make fine plants if seed is sown in pots and the seedlings pricked out in a cold frame in May, watering freely in dry weather.

Ten-week Stocks require sowing a little earlier than Asters, and ought to be sown thinly so that each seedling may have a chance of growing sturdily. There will then be less mortality among them, Stocks being very subject to damping off if the seedlings are crowded.—E. D. S.

PRIMULAS AT WORDSLEY.

THE Primula of to-day bears little resemblance to its prototype of the sinensis family of sixty years ago, and scarcely any of the florists' flowers have been improved with such rapidity. The weak, puny flower of that period, elevated on attenuated flower stalks, has developed into flowers borne in trusses, splendid in size and substance, rising from bold stout foliage. With the most careful hybridisation, followed by the same care in selection, we appear to have arrived at the time when the Primula as a winter and spring embellisher of greenhouses and conservatories must always remain the flower *par excellence*. With the advance above noted Messrs. Webb & Sons have kept abreast of the times. One of the firm's finest productions is named Purity, and amongst the several houses full of fine varieties, Purity stands forth as one of the most charming. The plants are vigorous and full of health. The dark red bronzy foliage, borne on stout footstalks, is surmounted by the pure white flowers,

each having a disc of pale sulphur. The trusses are carried well above the foliage, and the effect of a house of plants in full bloom is most striking. Continuing with the light coloured forms, it will be equally true to say that the position enjoyed by Purity in the whites is followed closely, if not surpassed, in the tinted varieties by Modesty, which magnificent variety opens white, but when fully expanded gradually deepens into a pleasing and delicate pink or flesh colour. The habit of the plant is superb, dwarf, sturdy, with Fern-leaf foliage of a beautiful green. The crimped flowers are of great size and substance, and are produced in profusion on stout stems. It is an exquisite variety, which visitors are not slow in appreciating. The flowers keep well, and for this reason should prove invaluable for table decoration.

Another rosy tinted variety finds an appropriate name in Rosy Morn. It is of the plain-leaved section, with somewhat deeper coloured flowers than the preceding. This elegantly fimbriated Primula must become popular. The colour is novel, carmine rose, deepening several shades

ducing spikes continuously, and these lengthen into whorls of flowers, until the plant assumes a pyramidal shape. To those seeking a unique colour Eclipse will appeal very strongly, for whether grown in quantity as at Wordsley, or singly, the purplish crimson flower is sure to gain attention and admiration. Careful selection and the weeding out of rogues assiduously persisted in, has brought a Primula worthy of the name it bears. The yellow disc in the centre is well defined, and the bold flowers are heavily fringed, which render the variety very useful and quite indispensable where shades of crimson are favoured. The growth is dwarf and compact, and with the dark red foliage below and gaily trusses of flowers above, is a variety of which everyone must make note.

Of the blues, Webbs' new Blue Belle is no washed-out apology, or a pale blue even, but a blue pure and simple. I remember the first blue Primula, and can thoroughly appreciate the progress that is now manifested. At Wordsley it is true, and in good character. The plants are dwarf with dull red stems and dark leaves, and flowers of a decided blue,

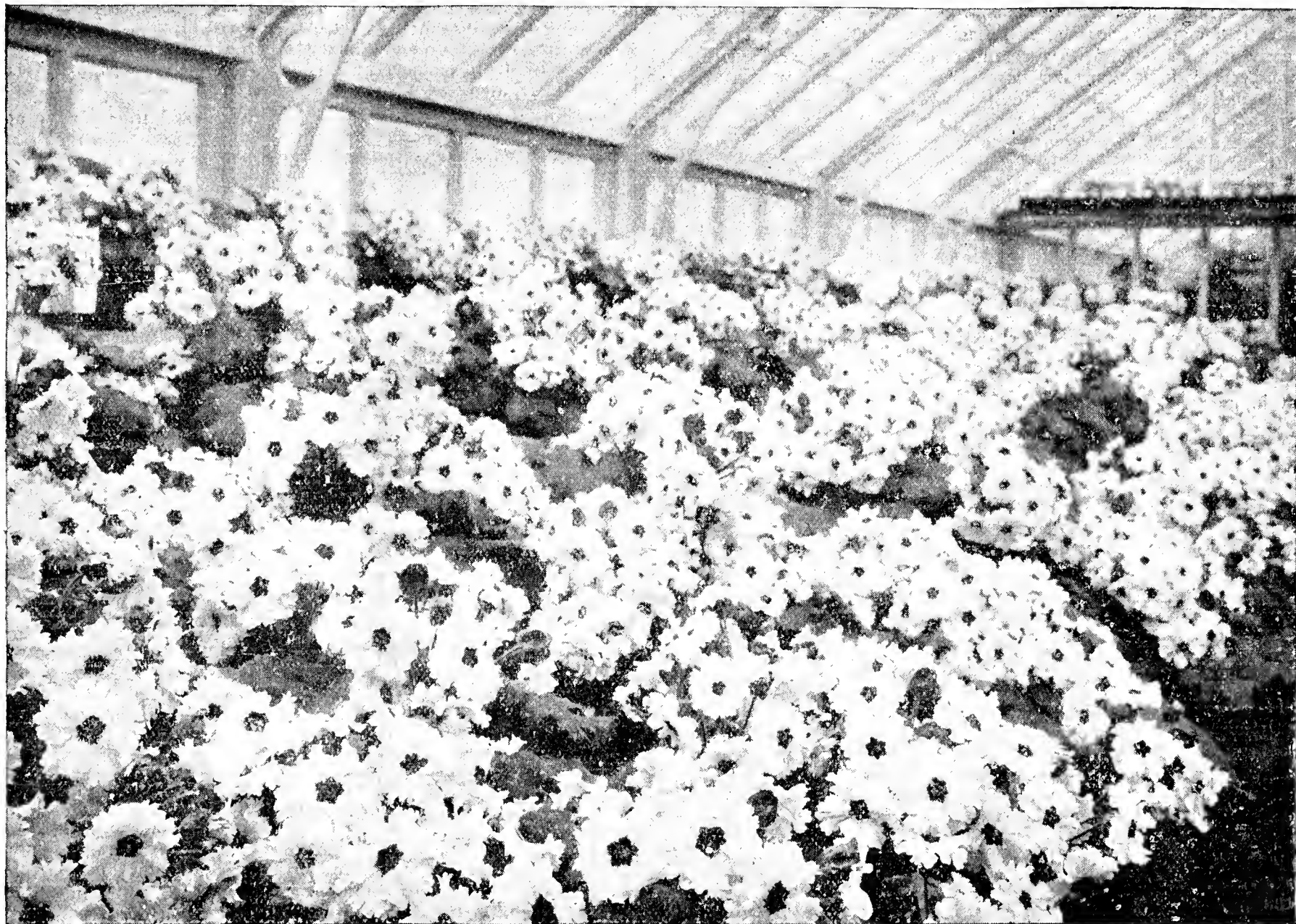


FIG. 33.—PRIMULAS AT WORDSLEY.

here and there on the same flower with age. It is somewhat taller than Modesty, but is equally as free-flowering. Although there are several other of the lighter coloured section all of merit, space will not permit more than a reference to the leading varieties at present.

Let us then pass on to colour, such as is rarely seen in the Primula family, with especial reference to Firefly. I doubt if the insect of that name ever shone so brightly as its counterpart in nomenclature. It strikes one as a glorified type of the Old Chiswick Red, a Primula hard to approach, much less to surpass, ten years ago. The colour is vivid dazzling crimson, dark-stemmed, with the bloom resting, as it were, on crumpled foliage. The effect of a large collection of this variety on a dull January day is most pleasing, and everyone who desires to add cheerfulness and colour to their conservatories must perforce grow this acquisition in bulk.

Scarlet Emperor too, calls for attention. In colour it is what I should designate soft scarlet. The chief point in this splendid variety is the wealth of bloom the plants carry. And yet there is size as well, and it makes one wonder that bad socks are tolerated by anyone when plants like Scarlet Emperor can be grown without any more trouble and expense. This, too, has dark foliage similar to Purity. It is strong and vigorous, with flower stalks carried well above the leaves, and keeps pro-

ducing spikes continuously, and these lengthen into whorls of flowers, until the plant assumes a pyramidal shape. To those seeking a unique colour Eclipse will appeal very strongly, for whether grown in quantity as at Wordsley, or singly, the purplish crimson flower is sure to gain attention and admiration. Careful selection and the weeding out of rogues assiduously persisted in, has brought a Primula worthy of the name it bears. The yellow disc in the centre is well defined, and the bold flowers are heavily fringed, which render the variety very useful and quite indispensable where shades of crimson are favoured. The growth is dwarf and compact, and with the dark red foliage below and gaily trusses of flowers above, is a variety of which everyone must make note.

In conclusion, Messrs. Webb & Sons, with increased facilities for the reproduction of the grand strains, may go on, as indeed they are at the present time, selecting and hybridising. Practical in all their dealings, the partners place only the best before their customers, who are the supreme judges of quality, and in these days of keen competition this must be the keynote of success.—G. M. A.

[We can corroborate our correspondent's remarks on the Wordsley Primulas. We know the grower, Mr. W. Dyke, to be a close observer, who is always ready to increase his large store of practical knowledge from any available source. The illustration (fig. 33), from a photograph supplied by Messrs. Webb & Sons, represents a house of Primula Purity, about whose merits, with the above notes and such a picture, nothing more need be said.]



ROSE PESTS.

ROSES in houses which are being brought on steadily by the aid of a little fire heat have been making rapid progress during the last few sunny days. Few plants show the beneficial effects of welcome sunshine after a spell of wet cold weather quicker than do Roses. If such weather continue thorough syringings should be given daily, or green aphides will soon make its appearance. Even with the best of attention we generally get a slight attack during the spring months; but if fumigating is done as soon as the first signs of aphids is noticed there is not much difficulty in preventing injury.

Mildew is, perhaps, the worst pest we have to contend with in the Rose house, as when once it is thoroughly eradicated it frequently puts in an appearance again. Finally, ventilation is doubtless in many instances the primary cause of such attacks. The ventilators are, perhaps, kept closed for days together while the weather is wet and cold, and then too suddenly thrown open when bright sunshine comes. Provided a chink of air is given early on bright mornings it is always better to err on the side of under, rather than over-ventilation. Changeable weather such as we generally experience in March offers so many temptations to put air on too freely; the sun may be shining powerfully while a cutting wind prevails. Fear of getting some of the shoots scorched then induces many to give air too freely, and if the shoots near the ventilators are closely watched signs of mildew may be traced a day or two after. The time when syringing is performed is also a matter of some importance during changeable weather.

It is often a practice to wait until the house is closed before syringing is performed. This is, I think, a mistake, as at this season dull afternoons often succeed bright mornings; and in the case of late syringings the water rests upon the foliage during the time the temperature of the house is rapidly lowered. The plan I adopt is to syringe while the sun is powerful, whether it be at eleven, twelve, or one o'clock, the ventilators being closed when the sun loses power.

Another fruitful cause of mildew in the cases of Roses planted out is allowing the border to become too dry. Such borders are usually watered when the house is started, and if the soil forming the border is not heavy, by the time the first buds are visible it will generally require another application, if possible of liquid manure, or as a substitute, a dressing of one of the many approved chemical manures, thoroughly watered in. Such timely attention helps to put substance into both leaves and flowers, and renders them more proof against insect pests.

A cheap wash for destroying mildew is formed by dissolving 2 ozs. of soft soap in a gallon of water, and adding thereto a handful of sulphur; if this is thoroughly mixed and syringed on the plant it will kill every particle of mildew that it touches. There is, however, one slight objection to its use—viz., that the sulphur adheres to the leaves and rather spoils their appearance for a time. This is not of much consequence in the early stages of growth, but when the wash is applied just before the buds begin to open, the disfigured leaves spoil the appearance of the blooms, and when hundreds or thousands are ready for cutting at one time, it is an expensive business to clean the leaves. Richard's Mildew Insecticide is free from the above drawback, and is equally effectual.—H. D.

COLOURED IVY LEAVES.—Nothing could be more charming than the delicate tints of the common Ivy leaf growing on walls in some situations at this time of the year. I fancy it must be the condition of the soil that governs the colouration of leaves, as in a deep fertile medium the growth is invariably rank, and the foliage never changes from its dark green hue. I know of an establishment built of sandstone, the walls of which are partially covered with Ivy. With the exception of a small body of soil in which the Ivy was planted, the rooting medium is chiefly sandstone and rubble left near the foundations at the time of building. Consequent upon this the growth is never vigorous, and the leaves comparatively small. During the winter and early spring the latter assume a variety of tints, which are both charming and useful for decorative purposes. The varied colouring resembles very much the ripening tints of Vine leaves, and are generally most glowing near the points of the shoots. Some are almost yellow, others a reddish brown, and others again nearly crimson. Sprays of these tinted growths detached from the walls in lengths are very pleasing for decorations, and are often worn by ladies in preference to flowers. The leaves are also used largely in the make-up of wreaths, crosses, and other floral designs, for which purpose they are very suitable. I know of no form of wreath simpler and more charming than one made up of tinted Ivy leaves, with the flatness broken by the tips of leading shoots. Also for draping round pictures and ornaments in rooms sprays of coloured Ivy are elegant and effective.—H. H.

NYMPHÆAS AND BEES.

I WAS pleased to see a few notes on the above in the Journal, page 378, last vol., by Mr. Hudson; and although he does not at present explain the question, he has promised to make observations during the coming flowering season, and I have no doubt that the information he will give will be valuable and interesting.

Your contributor's remarks *re* the flies found in *N. stellata* is also identical with mine, and further, the notes given in a recent issue as regards bees will (as far as my observations go) also apply to flies. *N. alba* is visited by a large number of flies that are about the size and colour of the common honey bee, and they do their work in such a thorough manner that there is not the slightest doubt in concluding that they are the principal fertilising agents. This fly is also found dead in the flowers. Perhaps one or two may be found in every hundred blooms.

N. stellata flowers contain a greater number of dead flies with me—about fifteen or twenty to every hundred blooms. Although it is about the length of an ordinary bee the body is smaller, and it is nearly black in colour, and is quite distinct from the fly that is found in *N. alba*.

The observations I have made have caused me to arrive at the following conclusions:—The freshly developed flowers on the first day of opening contain a watery liquid at the base, which is surrounded by a well arranged circle of sepals. The second or third day of opening the sepals are irregular and more fully developed. Flies appear to favour the second or third day flowers, which are evidently visited with less risk, but should they accidentally or otherwise try to perform their mission on the fresh blooms they invariably get their bodies wet with the watery liquid. I have often seen them struggling to get out, but the sepals being so evenly placed they can only take hold of one or two each time, which is not sufficient to support them, consequently they are precipitated again into the liquid, and I think death is caused by exhaustion, assisted no doubt by the odour from the fresh flowers.

To support this I have on several occasions held on one side the flower containing the struggling fly, which has enabled it to crawl out, and after a few seconds it has taken flight, apparently none the worse for its bath. I have never yet observed a fly trapped in a bloom on the second or third day of opening.

Referring again to Nymphæas and bees; an article (page 393) by "Gardener and Bee-keeper," suggests that the climate may play an important part in controlling the fertilising agents. I do not hesitate in arriving at the same conclusion, for although the bees will seek for pollen from the Nymphæa flowers, it is generally during the first two or three hours they are open in the morning, and if the sun is by that time very high, most of them disappear, and their place is then taken by the flies referred to. Bees also favour the second or third day flower, but occasionally they will visit a flower on the first day or opening, and although they may go to the bottom I have only known a few instances where they have been trapped.

My present theory (which is based to some extent on facts) is that bees, or other fertilising agents, obtain pollen from distinctive species or genera that may contain an aroma peculiarly adapted to their taste and requirements, and allied species in close proximity are yet refused by them; it seems reasonable to suppose that by artificially fertilising the two species, the hybrids obtained would in all probability contain pollen that would be a combination of the two. In such cases these fertilising agents would acquire a taste for the hybrid, which would enable them to visit the flowers of the intermediate varieties, and also the original species.

As regards chance hybrid Nymphæas, I have not yet seen one obtained from naturally fertilised plants, and I think that plants generally retain their distinctive types and colours by natural fertilising agents. When, however, the natural laws are broken by artificial crossing, then the natural agents are again at work, and greater variations produced by their aid.

About eight years ago a friend of mine had a very large and beautifully fringed single white Hollyhock. I obtained some seeds which I saw taken from the plant. I sowed it early in spring in new ground, where native shrubs had been recently taken out. There must have been fully 100 seedlings, but very few had the Hollyhock leaf. After about two months from sowing they were flowering. The flowers were about 2½ inches across; some were white, some pink, but they were a distinct cross between the common Mallow and the Hollyhock. The few with the Hollyhock leaf remained true as far as the plant was concerned, and flowered the following season, but had pale yellow flowers that were not fringed like the parent. The others were annuals, which seeded freely and came up in the same place for two or three years without the slightest variation.—THOS. POCKETT, Malvern, Australia.



CLASSIFICATION OF INCURVED.

If I read correctly, Mr. Godfrey, page 142, says in several schedules he has received only the varieties classed as incurved can be shown in that section. The presumption is this, then, that those Societies alluded to will not allow any variety not included in the N.C.S. catalogue or list to be shown at their show. Surely this is somewhat a high-handed stipulation. Suppose during the current year a cultivator brings out an excellent Chinese incurved variety and desires to stage blooms in competition at the shows in question, cannot he do so because of some rule such as is outlined above?—SADOC.

LATE CHRYSANTHEMUMS.

FROM remarks made in a letter recently received from a friend who successfully cultivates late Chrysanthemums it does not appear there is any sign of this section waning, whatever may happen to the large bloom method of culture. Personally I think enthusiasm is increasing even in the latter section. Because one society (Watford) finds it necessary, or advisable, to wind up its affairs, that surely is no proof of a general decline in interest taken in the autumn queen. I know at least three new societies that are making a strong bid for public patronage in their initial attempt at establishing an autumn show. Such evidence is ample proof that the Chrysanthemum has not seen its last days yet awhile.

My friend writes:—"I am growing this season 35,000 plants made up in the following order: Elaine, Souvenir de Petite Amie, Niveus, and L. Canning 7000 each; W. H. Lincoln and Mons. Panckoucke 3500 each. Last season I had fourteen houses of Elaine alone!" Even such a collection as this gives but a faint notion of the number of plants cultivated by market men alone.—E. M.

SEASONABLE NOTES ON FORCING FIGS.

EARLIEST FORCED TREES IN POTS.

THE fruits will soon have completed their first swelling, and they then remain apparently stationary for some time. This is the most critical stage in their culture, and every care must be taken not to give a check, whether caused by excessive heat or want of moisture. In mild weather the temperature may be kept at 60° to 65° at night, but if cold 5° less will be safer. Progress is best made in the daytime by closing with plenty of heat and moisture, a rise being indulged in of 10° to 15° without producing a weak or elongated growth, keeping through the day with gleams of sun at 70° to 75°. Red spider must be kept under by copious syringing on all favourable occasions. Afford a steady supply of liquid manure to the roots, as Figs in full growth require generous support, and can hardly be overwatered provided the drainage is thorough.

PLANTED-OUT FIG TREES.

When these were started early in the year they will now require disbudding and stopping. Crowded growths must be thinned, but they are better prevented by disbudding, leaving no more shoots than space permits. Where extension or successional growth cannot be allowed the shoots may be pinched at the fourth or fifth leaf to form spurs, these giving good results in the second crop, but avoid crowding as the greatest of evils. In order to secure free and certain swelling in the first crop Figs it is advisable to keep the growths closely pinched for a time, as these are apt to appropriate the sap, and the first fruits suffer and fall in consequence when they are allowed to grow unchecked. Water the border freely when necessary at the temperature of the house or supply liquid manure, not too strong, and mulch with rich compost, which will attract the roots to the surface, where they can be fed by sprinkling with some appropriate fertiliser.

Where the trees are confined to narrow and shallow borders encourage the emission of roots from the collar or stem by placing pieces of fibrous turf and partially decayed manure in contact with it, and by extending the material outwards a number of feeders will be secured. If these are supplied with water or liquid manure, or top-dressings of artificial manures, they will greatly assist the second crop of fruit as well as the first. Keep the night temperature at 55° to 60°. When it reaches 65° by artificial means in the day admit a little air, increasing the ventilation with the temperature and reducing it in like manner, closing at 70°, syringing twice a day, and otherwise maintaining a genial atmosphere.

YOUNG TREES IN POTS.

Those intended for next year's forcing should be shifted into larger pots, and be placed in or over bottom heat. The compost may consist of

good yellow loam, with a fifth of well-decayed manure and a sixth of old mortar rubbish, adding a sprinkling of crushed bones, say a 6-inch potful to a bushel of loam. Provide good drainage, pot firmly, and do not let the shift exceed 3 inches in diameter that of the previous pot. Shade slightly from bright sunshine for a few days until the roots have taken to the new soil, when the trees should be fully exposed to light and sun. Pinch the growths at about four leaves to induce a bushy habit. The trees must be grown in all the light possible, so as to insure sturdy, short-jointed, thoroughly solidified growth.—GROWER.

NOTES FROM IRELAND.

ONE night's frost and two days' rain, then repeat the same again, seems to sum up the peculiar character of the passing winter. It is decidedly unpleasant; but vegetation does not appear to dislike the cold drenchings, for in spite of the chilling influence activity is apparent in the kingdom of silent life. In the garden knots of green have lately studded the Roses, and pale spear-points spring through the protective dead foliage of a goodly patch of Montbretia. What a progressive plant this Montbretia is, surely! Only six years since we planted a hundred of the Crocus-like corms; now one ventures to assert that a hundred thousand would be nearer the quantity in evidence.

The Doronicums, too—how glorious are these great, golden Daisies when well fed! Already a few buds are bursting into bloom, appreciated the more perhaps that, despite an open season, not many flowers have brightened up the dark days of winter. True, the proverbial Primrose has not been wanting. Primroses, like the poor, seem to be always with us. At present two long lines of hybrid seedlings display, in a measure, all the hues they are capable of so far as the bespattering down-pour will allow; but we would, I think, rather have them "coming in the springtime to tell of sunny hours."

Lately we wandered to the rocky slopes of Killiney Hill, a portion of which has been reserved to the public for ever in commemoration of our good Queen's Jubilee. Grand banks of a sturdy Veronica embellish some of the marine residences *en route*, and blooming profusely in mid-February as they were, left no question as to local suitability. Looking down from the dizzy heights of Victoria Hill the "Loch Fergus," a barque-rigged stately looking ship driven in shore and wrecked a few days previous, was a speaking witness of the wind-swept position. In the near distance, but comparatively sheltered, is St. Brigid's garden, that *multum in parvo* so tenderly cared for by the lady of the Anemones. Fine bits of natural rockwork are in evidence on the ascent to the hill, on the summit of which stands a puerile looking obelisk, which even 150 years of existence have failed to tone into harmony with the surroundings. With the exception of a couple of lesser monstrosities of the same crude conception Victoria Hill is left—and rightly left—to Nature and the citizens of the "cardrivingest city." On the sunny side sheets of golden Furze brighten the scene. The dedication of this fine bit of Nature's handiwork to the public was a fit offering to Freedom's shrine.

Below lies Dalkey, where a little coterie of sturdy "mum" growers abide; whom, judging by what one has seen and heard, are still as fever-smitten as when Mr. Molyneux and the writer discussed a tasty — together in one of their hospitable homes. Despite the above good examples, and some advantages of position, the Dalkeyites do not seem horticulturally inclined. So many of the humbler homes, which are naked, might be beautified by such plants as Escallonia macrantha, Fuchsia gracilis, and others which love the breath of the sea. A little inland, at the Alpine-like village of Enniskerry, we saw, some years since, charming masses of Lobelia fulgens in the tiny cottage gardens. However, note-taking, probably, should only include what is seen, but, possibly, is not purposeless in relating what is felt to be wanting. With this brief apology, Victoria Hill, and its environs, are left for higher ground in the gardening world.

As these notes are penned comes the intelligence of a home, whose name and fame are written high in the annals of gardening in the Green Isle, hereaved of its master. Few keenly interested in gardening have visited these shores without a run round picturesque Straffan in the plains of Kildare, and most will, I am sure, sympathise with the Hon. Mrs. Barton and her estimable head gardener, Mr. Bedford, who has ruled the horticultural department so ably and so long. Visits to Straffan have always made the pen run smoothly in depicting its glories; one can but dare to hope that no change may occur to leave them only memories of the past.

The retirement, lately, of G. M. Ross, Esq., M.A., from the secretaryship of the Royal Horticultural Society of Ireland, led to some 200 good men and true (including a new woman, I heard), applying for the post, which is now filled by the appointment of Mr. Hilliard. We trust he may be favoured by those fickle circumstances surrounding the field days, in order to carry on the good work of his predecessor, who, figuratively, pulled the old Society out of low water, and left it standing high and dry, well propped by a bank balance.—K., Dublin.

THE HISTORY OF THE PELARGONIUM.

(Concluded from page 153.)

THE Zonal race acquired importance subsequently to the large-flowering section. Those we collectively term "Zonals" were grouped by Sweet under the generic designation *Ciconium*, and the most important of this genus are *Ciconium zonale*, introduced in 1710, and *Ciconium inquinans*, introduced in 1714. These are the two parents of the race, no doubt, but their differences do not account for the fact that in the garden varieties we have every imaginable variation of leafage and of bloom. It is likely that *Ciconium reticulatum* of Sweet (143), a very distinct hybrid, gave the first touch to the variegation of the leaves, which has attained to such extraordinary development. In any case, this hybrid marks a distinct departure and appears to be well suited to be the founder of a race.

The "Nosegay" section is the oldest of the Zonals. The founder of this section is *Ciconium Fothergilli*, the figure of which by Sweet (226) would nearly serve to represent a good Nosegay of the present day, and it may therefore be concluded that the Nosegays have been less modified than the Zonals that represent *zonale* and *inquinans*.

Another early section is that with green leaves and pink flowers, of which we may consider *Christine* the modern type. This section is foreshadowed in *Ciconium cerinum*, which is admirably figured by Sweet (176). Here we have pubescent leaves and flowers of a soft rosy pink colour, the petals of which are beautifully rounded and nearly equal in size. Cultivators who remember *Lucia rosea* will have no difficulty in connecting the dwarf bedding Pelargoniums of the *Christine* class with this beautiful wax-flowered Pelargonium, which Sweet regarded as a true species.

The famous General Tom Thumb, a descendant of *Frogmore Scarlet*, and a competitor of *Huntsman*, *Cooper's Scarlet*, and many more that the General quickly vanquished from the field. This famous variety was raised by Mr. Wilson, gardener to W. Pigott, Esq., of Dullingham House, Newmarket, about the year 1842. It is said that as a seedling it was condemned and handed over to some children to be tormented, and very soon found its way to a dust-bin. But by some accident it was dragged from the dust-bin and planted, and as the summer advanced it manifested its character, and secured its fame and many more admirers than *Barnum's protégé*. But many persons have some kind of claim to the honour of raising Tom Thumb, for there prevailed during some fifteen years—say from 1840 to 1855—a mania for raising scarlet Pelargoniums adapted for bedding; for those were the days of the horticultural scarlet fever, and many varieties nearly alike came forth from various quarters. Many of these passed for genuine Tom Thumbs, and many perhaps were quite as good. However, the original and true variety differed from most of the others in this respect, that it rarely ripened a seed unless it was artificially fertilised, when it was as prolific as any. This fact separates it far from *Christine*, which is an inveterate seeder. The leafage also puts them far asunder, for Tom has a smooth papery leaf of a yellowish green, and *Christine* has a thick soft leaf of a bluish green—one takes us back to *inquinans*, the other to *cerifera*, and Nature ordered the characters ages ago in the solitudes that stretch away drearily to the west of Cape Town.

The pink-flowered *Christine* was raised by Mr. F. R. Kinghorn of Richmond in the year 1852. The parents were *Ingram's Princess Royal* and an old pink Nosegay, which was formerly much used for training on walls and pillars. The peculiar softness and blue tone of the leafage of *Christine* do not appear to be accounted for by the parentage, there being in it such evident traces of the *Cerinum* or *Monstrosum* of Sweet. Mr. Kinghorn, to whom I am indebted for its history, tells me that he very soon made note of its strong individuality, in which it seems to rise to the rank of a species, and reproduces itself freely and truly from seeds. During some fifteen years it was the most popular of all bedding plants, for it outran Tom Thumb at last. The beautiful *Rose Queen*, sent out in 1855, was one of the good things obtained by Mr. Kinghorn in the same batch with *Christine*. This has higher quality, but never proved so good a bedder, and therefore never attained to great popularity.

It would be unfair to omit all mention of the variegated-leaved varieties, because in a good bedding display they contribute features fully as important as the strong colours. They tone down and harmonise and divide. In the year 1844 there were very few variegated Zonals known, and only one with bright scarlet flowers: this was called *Lee's Variegated*, and was very scarce. It was, I think, raised by Mr. Bailey, then gardener at Nuneham Park. Mr. Kinghorn selected this *Lee's Variegated* to supply pollen for a cross on the old *Compactum*, which was the seed parent, and in the first batch of seedlings from this cross he obtained the celebrated *Cerise Unique*, and the much more celebrated *Flower of the Day*, the most useful and most famous of all known variegated-leaved Zonals. Mr. Kinghorn considered this was the greatest advance ever accomplished at one bound in work of this kind, and I thoroughly agree with him. The large seedling plant and two smaller plants of *Flower of the Day* were purchased by Messrs. Lee in August, 1849, and in August, 1850, they had a stock of 1500 plants of various sizes to offer for sale—a wonderful sight in those days, and one worth seeing even now.

It so happens that the last-named, most useful of all the silver-leaved varieties, conducts us direct to the fountain head of the whole race of the tricolors. In the year 1850 Mr. Kinghorn raised from *Flower of the Day* the beautiful variety known as *Attraction*, the leaf of which has a silvery margin and a dark zone, diffusing subdued rays of red and rich brown outwards upon the creamy band that girdles it. The *Attraction* was the first silver tricolor, and one of the parents of the first golden

tricolor. Mr. Grieve, in his admirable History of Variegated Pelargoniums, tells that he fertilised a dark-zoned variety known as *Cottage Maid* with the pollen of *Attraction*. Amongst the seedlings occurred one that was the parent of the dark-zoned Emperor of the French, from which came the whole race of golden tricolors. From *Cottage Maid* and *Golden Chain* (the latter being the pollen parent) Mr. Grieve obtained *Golden Tom Thumb*, and from Emperor of the French and *Golden Tom Thumb* (the latter being the pollen parent) he obtained *Golden Pheasant*, the first true golden tricolor. This same Emperor of the French, grandson of *Attraction*, produced by the pollen of *Golden Pheasant* two famous tricolors, *Mrs. Pollock* and *Sunset*.

The double Pelargoniums have had a career of fifty years at least. A handsome double purple, named *Veitchianum*, not of the zonal section, but allied to *Barringtonia*, was raised by the late Mr. J. Veitch at Exeter about the year 1828, and its portrait appears in Sweet's supplementary volume (81), where nearly next door to it is another double named *Implicatum* (86).

But the proper history of the doubles begins with *Wilmore's Surprise*, a handsome semi-double variety, which was described and figured in the "Gardeners' Chronicle" of August 17th, 1850. This was found by Mrs. Wilmore of Strawberry Vale, Edgbaston, growing in the midst of a plantation of *Hollyhocks*, and so unaccustomed were the eyes of the florists to such a thing that it was considered to be a true hybrid between a Pelargonium and a *Hollyhock*. A remarkable fact in the history of this variety is that simultaneously with the finding of it in the garden at Edgbaston it was obtained by the late Mr. Beaton as a sport from *Diadematum rubescens*, and was by him named *Monstrosum*. The Edgbaston plant was shown by Messrs. Lee of Hammersmith at Regent's Park on the 30th of June, 1852, and Mr. Beaton suppressed his *monstrosum* in favour of it.

The double Zonals are of later date, one of the earliest being the crimson-scarlet *Gloire de Nancy*, which was first shown in this country in the year 1866. In the year 1869 there were seventeen double Zonals brought into public notice, and of other sections in that year the collective name was *Legion*. At this point of the story the subject becomes too large to be handled on the present occasion. It is quite certain that during the few years when *Geraniums* were everything and all other vegetables nothing in human estimation the heads of gardeners were so crammed with zones and margins, and trusses and pips and beds, that there was no room for anything else, and the phenomena of the tulipomania were reproduced in a newer fashion, and no one was fully aware of the fact that the world had gone mad on the subject of Pelargoniums.

Now that we can again survey the subject calmly it will be observed that two classes of Pelargoniums remain in full favour with the public. The large-flowered show varieties and the large-flowered single Zonals take the lead, and they are pleasantly followed by a crowd of lily-leaved, double-flowered, and variegated sorts that are useful and beautiful, but no longer oppress us by their multitude and similarity. A severe standard of judging has been set up, and a variety must be distinct and good to pass through the sieve. Moreover, the raising of varieties has been to a great extent reduced to scientific principles, and we obtain as a result new characters suggestive of the great extent of the field that still lies open to the adventurous spirit in cross-breeding. No one in recent years has contributed more directly towards the scientific treatment of the subject than Dr. Denny, of whose labours I propose to present a hasty sketch.

Dr. Denny commenced the raising of Pelargoniums in the year 1866, having in view to ascertain the influence of parentage, and thus to establish a rule for the selection of varieties for seed-bearing purposes. In raising varieties with variegated leaves, as also with distinct and handsome flowers, he found the pollen parent exercised the greatest influence on the offspring. The foundation of his strain of circular-flowered Zonals was obtained by fertilising the large starry flowers of *Leonidas* with pollen taken from the finely formed flowers of *Lord Derby*. From 1871 to the present time (1880) Dr. Denny has sent out sixty varieties, and he has in the same period raised and flowered and destroyed about 30,000. These figures show that when the selection is severe, and nothing is allowed to pass that is not of the highest quality, there must be 500 seedlings grown for the chance of obtaining one worth naming. The late Mr. John Salter used to say that it was needful to flower 2000 seedling *Chrysanthemums* for the chance of one worth naming. Therefore, if the comparison is of any value, it shows that raising Zonals is a very profitable business, the chances of success being four times greater than with *Chrysanthemums*. But Dr. Denny obtains more good things than he sends out, for he makes every year a selection of plants for seeding, and these amount to about 3 per cent. of the total number. It will be seen, therefore, that for every one sent out under name there are about fifteen equally good, or nearly so, but for some reason or other they are not parted with, but are reserved to supply seed or pollen, and are then destroyed to make room for a new selection.

Amongst many interesting results of our friend's observations is one that strikingly confirms a suspicion that accompanies a study of Sweet's portraits—it is that some varieties assume the character and bearing of species, and by self-fertilisation reproduce themselves with peculiar exactitude. No one can doubt that many of the so-called species of plants, whether of Pelargoniums at the Cape or of Willows in England, are as truly hybrids as any that are raised in gardens. And this brings us to the question, What is a species? and the question suggests that if in treating this great subject I scarcely knew where to begin, I certainly know where to leave off. I confess I do not know what is a species—and so, thanking you for your kind attention, I now return to the golden silence.

MUTISIA CLEMATIS.

THIS, "J. R.," is an ornamental plant, the long tubular bright red flower heads drooping from the slender climbing stems supported by neat pinnate and tendril-terminated leaves having a graceful appearance in suitable situations. It succeeds very well in a greenhouse trained to a pillar or short rafter, but the plant requires a position where it can be readily seen. It can be planted out or grown in pots, a compost of loam, peat, and sand suiting it well, with plenty of water when in growth, and a well marked period of rest subsequently. Fig. 34 represents a bloom of this beautiful, though seldom grown, plant.

DEEP POTTING AND PLANTING.

THE question of planting Tomatoes deeply may be applied to other plants also. Personally I do not believe in earthing up say 6 inches to a foot of Tomato stem at one operation, but always advocate planting low down in the boxes or pots in shallow soil, and when this is permeated with roots adding an inch at a time as necessary until the limit of soil capacity is reached. No plant better responds to frequent top dressings than the Tomato. As the fruit develops, a little enrichment varied from time to time with soot or the excrement of sheep, horses, or fowls in limited quantities separately is excellent. These applications induce the white rootlets to break from the stem, and joining their predecessors eagerly run through the food mixture, provided so to speak in relays, and the plant progresses without lack of energy for all requirements.

This would seem the more natural treatment. I am a thorough believer in the efficacy of judicious top dressings where practicable, and this belief surely is universal, or wherefore the dressings annually given to Peach trees and Vines, while the shrubberies have theirs in fallen leaves forked in year by year. Again, the farmer carts soil, road sidings, or manure on to his grass. Surely we have enough depth of soil here. But that is not the object: he well knows that these annual top dressings prove a healthy stimulant to his grass crops, new roots form, and as the sun increases in power, two or three blades of grass shoot up where probably only one would have grown under less favourable treatment. This should convince every thinking man of the necessity of maintaining a healthy root action by periodical dressings as recommended.

With ordinary plants in pots we see the same misconception. Of course one cannot very well apply the process recommended for Tomatoes to all, but no one will deny that frequent pottings in the case of such quick growing plants as Cinerarias and Calceolarias are preferable to giving unduly large shifts from small to big pots at one operation. I am for this reason averse to layering Strawberry runners directly into their fruiting pots on the assumption that a second potting supplies something that was lost in the former system ere the roots derived any benefit therefrom.

But to revert to deep potting. I have repeatedly proved that various plants, such as Begonias, Gloxinias, Hyacinths, Tulips, Lilliums, Gladioli, and many others do equally as well potted deeply as otherwise. I never had better seedling Gloxinias than I grew last year, and these being drawn somewhat through no fault of mine, I let them down nearly to the bottom of the pots, and no plants could have thrived or flowered better. Some growers allow the corm of Cyclamens to rest on the soil; I prefer them with the crown only clear, as I am convinced there is much more danger from shallow potting or planting than is to be feared in the other instance with the above plants.

There are of course times when it is necessary to alter the general rule of planting. In summers like last, the winter Greens, Brussels Sprouts and Broccoli stood best, when, although leggy, they were planted deeply with a crowbar and afterwards had soil drawn up to their stems. But in every instance where practicable, constant feeding judiciously given from time to time when needed will never be misapplied, especially to such gross feeders as Cucumbers, Melons, Vines, Peaches, Tomatoes—in fact all fruit bearing plants are better top-dressed than potted afresh. I should like to see other opinions on this matter.—A MIDLAND GARDENER.

DEEP POTTING TOMATO PLANTS.

"A." (page 144), seems to doubt the utility of potting young Tomato plants deeply, and hints that only those who wish to hide bad culture adopt it as their primary object. The best practical growers do not bury the stems when potting for that reason, but because they find even the sturdiest and healthiest plants benefit thereby. Why should top dressings be given strong plants in a fruiting stage and thus encourage roots from the stem if the practice is not beneficial?—E.

"A." appears to be somewhat sceptical as to the good results obtained by the above practice, as recommended by "Observer," and endorsed by "E. D. S." If I do not mistake the identity of "A.," we all know him to be a wielder of the pen who is cautious in the extreme, and this to prevent us all from doing anything rash. Before he sanctions the practice of deep potting or planting as being a good one, he would like to hear of some practical grower experimenting by planting six plants of one variety in the ordinary way, and a similar number with their stems buried 4 or 5 inches. "A.'s" wish has been anticipated on a far larger scale than he proposes. Last year I planted a house with Challenger; four rows of plants were employed, and as some of the plants were leggy, the stems were buried quite 4 or 5 inches. Yet the whole of the plants were a

pronounced success, the two central rows attained a height of 7 feet, and fruited right to the top, in fact I never saw a heavier crop. It sounds well to write against deep planting to hide bad culture, but when thousands of plants are grown some of them are sure to become comparatively leggy.—H. D.

PERENNIAL BORDER FLOWERS.

(Continued from page 52).

ADENOPHORAS.

THESE plants are not at all largely grown, probably because they do not lend themselves readily to division. The only satisfactory way of propagation is by means of seeds, and it is advisable that these should

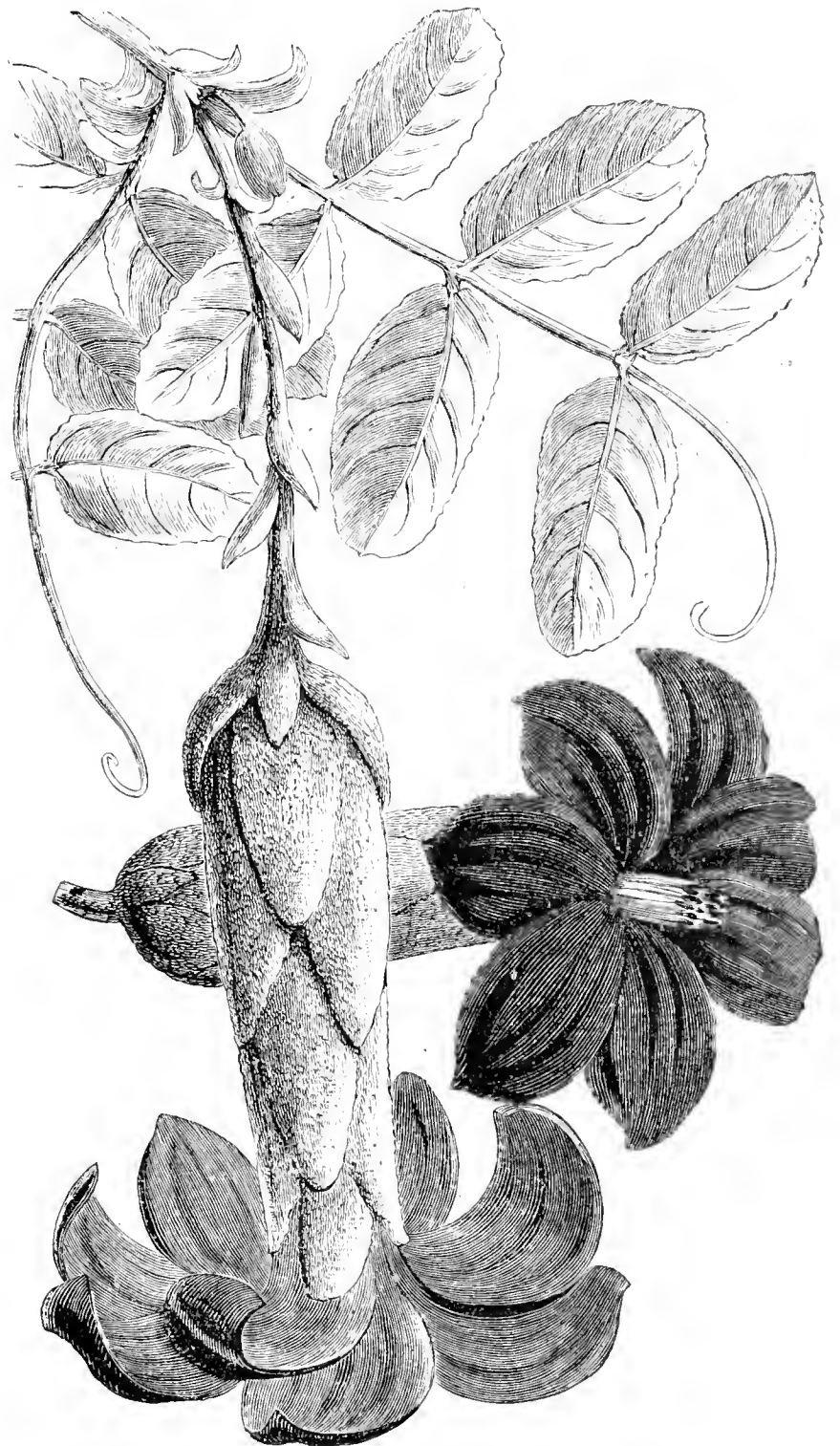


FIG. 34.—MUTISIA CLEMATIS.

be sown where the plants are to grow, or in small pots, from which they can be planted with the ball of earth attached. They have thick, fleshy roots, which are impatient of disturbance, and like a fairly strong soil with a rather moist subsoil. A sunny exposure is best. Out of a considerable number known only a few are to be found offered, and seed lists, even of specialists, show that there is little choice.

In catalogues of the current year, *A. denticulata*, *A. Lamareki*, *A. lilifolia*, and *A. Potanini* are the only species of which seeds are for sale. They generally resemble each other in their long spikes of drooping flowers, much like those of the Campanulas, from which only a small botanical distinction separates them. Of those named above *A. Lamareki* and *A. Potanini* grow about 18 or 20 inches high, the others being about a foot taller. The flowers of all are blue. Those of *A. Potanini* are larger than the others. The Adenophoras come from Dahuria and Siberia.

ADONISES

Plants bearing the name of Adonis ought to be handsome, and it may be said that few, if any, discredit the name. Not many are finer than the

well-known and general favourite *A. vernalis*, which about March yields us so freely its handsome yellow flowers. It ought, however, to be left undisturbed as long as possible if we are to have a good display. Earlier than it is the newer *A. amurensis*, a desirable plant, also with yellow flower, which is now considerably cheaper than it was a few years ago, *A. wolgensis* comes in between *A. vernalis* and *A. pyrenaica*. It also has yellow plumes. The fine species *A. pyrenaica* is a little taller than *A. vernalis*, and because of its later blooming habit is of less value to many flower growers, as by the time it comes into bloom other flowers are more plentiful.

These are the best of the perennial Adonises, and grow from 9 to 12 inches, or a little more, in height, this depending upon the character of the soil and the amount of moisture. They can be propagated by division when large enough, or may be raised from seeds. The latter is a slow process, as the seeds germinate slowly unless fresh, and plants are some time reaching a flowering size. There is every probability that these showy plants could be improved by raising and selecting seedlings; some plants of *A. vernalis* are much better than others.

ÆTHIONEMAS.

While these pretty Crucifers can, in some gardens, be grown in the choice border, they are better suited for the rock garden, and will not at present be treated of in detail. It may be said that *Æ. coridifolium*, rosy lilac; *Æ. grandiflorum*, rose; and *Æ. pulchellum*, rosy lilac, have been successfully cultivated in borders of light soil in warm gardens. They may be raised from seeds or cuttings.

AGAPANTHUSES.

Well known as a splendid plant for tubs or large pots, the *Agapanthus* or "African Lily" is only found as a hardy plant in southern gardens. There is an exception, however, which ought to be more largely taught, and this is that a small-flowered species, named *Agapanthus minor Mooreanus*, is quite hardy in the United Kingdom, except in some exceptionally cold districts. It has rather narrower and shorter leaves than the popular *A. umbellatus*, and the blooms, which are also produced in heads, are smaller than those of that species. The height of the flower stem is often stated as 18 inches, but this is variable, and with the writer a few inches more are usual. *A. minor Mooreanus* is increased by division, but may also be raised from seeds, which are obtainable from some seedsmen.

AJUGAS.

A great defect of the *Ajugas*, or Bugles, is that of running too freely by means of stolons, and thus encroaching on other plants to the detriment of the latter. Yet they have their merits and uses, and it kept within bounds are valuable in their way. One of the best of the genus is *A. genevensis*, which is generally seen with blue flowers, although there are white and also rose varieties. It grows from 6 to 12 inches high. It is said to thrive best in bog soil, but with the writer it has grown luxuriantly in light, dry soil. The finest blue variety is known as *A. g. Brockbanki*. This has very dark flowers, and also darkish leaves. It is troublesome because of its underground stolons, which come up where their absence would be preferable.

A. orientalis needs a warm place, and does not do well in many gardens. It grows rather over a foot high, and has whorls of blue flowers. Of some value in the garden to cover waste spaces or trail down rockwork are the dark-leaved and variegated forms of *A. reptans*, the common Bugle. The former has exceedingly dark leaves, resembling in colour the best of the dark-leaved Beets. They are, it is perhaps as well to say, much smaller. The variegated-leaved variety is very prettily marked with creamy white. Neither of these should be allowed to flower. *A. pyramidalis*, a native plant, is sometimes grown in gardens. It has blue flowers, and there are also purple varieties. The Bugles are increased by division.—S. ARNOTT.

(To be continued.)

THE BEST PEACHES.

IN conversation with a market grower of Peaches quite recently, he told me that he had discarded Royal George owing to its susceptibility to mildew. Such testimony as this is quite opposed to the selection of "H. D.," p. 119, who classes this variety as the best of Peaches. Personally I think it an excellent Peach when mildew is absent. I am aware, too, that "H. D." may reply there should be no mildew in a well-managed Peach house. In spite of this assertion, though, we find mildew where the least expected, especially if cold east winds prevail for several days during the month of May, combined with a hot sun. Cultivators are then tempted to admit more air through the front ventilators than is wise, and mildew might often be traced to this cause.

The selection of six varieties for the open air given by "H. D." I consider so good that I should wish but one change—viz., substitute Bellegarde for Royal George. The former produces large, handsome fruit, exceptionally high in colour on the sunny side and very rich in flavour. For growing under glass, I do not think Alexander is good enough to rank amongst the best three. The flavour is only moderate, and I would rather plant two trees of Waterloo than one each. Walburton's Admirable, I think, should find a place in the list of late varieties. It is a sure cropper under ordinary circumstances, grows to a huge size, while the flavour leaves little to be desired. For midseason growth I uphold "H. D." in his selection, especially in the inclusion of Violette Hâtive, of which I think very highly.—E. MOLYNEUX.

THE YOUNG GARDENERS' DOMAIN.

YOUNG MEN'S DREAMS.

No truer article and more to the point was ever written than that on page 99, and it should appeal forcibly to all young readers of the Journal. What is said about many young men after being a year or two in some institution where horticulture is taught is perfectly correct. They have only got the rudiments of gardening; principally theory and what the text books afford, and have little idea of the practical aspect. There is no one who believes in science in relation to horticulture more than myself, but without practice it is of little use. Gardening may be a pleasant occupation to some; but the same might be said about many another trade. There are dirty and rough jobs in connection with gardening, and it is the men who do not turn up their noses at the dirty work, but take an interest in everything, from wheeling manure to decorating a dinner table, that make the best gardeners.

It seems to me that there are too many gardeners being "manufactured," especially when we consider how many are turned out every year from private gardens and nurseries, not to speak of institutions. It would be better if it were made known to all young lads who are thinking about starting gardening what was expected of them and what they may expect. It might then save many a pang afterwards, and also keep many a "weed" from a garden. Although this is nothing in connection with the culture of any plant it is a subject that deserves to be discussed, and I hope to see a few remarks from some other young hands in the domain.—THISTLE.

OUR FRIEND THE TOAD.

YOUR correspondent "Parvo" (page 124) has not had an experience altogether unique in seeing a toad eat ants. About two years ago we were troubled very much by woodlice in our Melon house, in which hotbed material is put, and a ridge of soil runs on the top the whole length of the house in which the plants are placed. At night this bed became swarmed with woodlice of various sizes, also quantities of small black ants. The former pest ate the foliage that came in contact with the soil, and also ate small holes in the leaves attached to shoots which were tied to the horizontal wires above, while the ants completely cleared the flowers of pollen as soon as developed. These busy little insects seem to work incessantly night and day.

I therefore captured a couple of toads, which are rather scarce in the district, and put them in the Melon house, where they soon made themselves at home by burrowing in the soil, and sleeping all day. Every night when going through the houses at 10 P.M., I used to hunt up the toads and watch them; at first they seemed to avoid the light of my lamp, until one night I caught a good fat woodlouse and placed it on one of the toads' back, off which it soon scrambled and ran in front of the toad; the latter made a move forward, and putting its tongue out with a snap, tried to lick in the insect, and after three similar efforts the woodlouse disappeared in the somewhat capacious mouth of the toad. Every night after I used to catch the woodlice and throw them in front of the toad, which promptly showed its appreciation. It was surprising how tame it became.

The toad much preferred the woodlice to the ants, which latter I found it necessary to tempt from the flowers by placing a few small jars of sugar and water thinly mixed close to the stems of Melons, into which quantities went to partake, and were drowned. When entering the house one night at my usual hour, and about six weeks after the toads' incarceration, I was alarmed to see my friend the toad kicking about in a most unusual way. On closer inspection I found it was trying to slip its skin. While watching its struggles to free itself, I thought I should be the happy possessor of a toadskin, but after using its hind and fore feet a great deal it succeeded in getting the skin over its head into its mouth, and with one gulp it was swallowed, after which it crawled away in a new outer skin, which looked quite glossy, and two days afterwards no one but myself could believe so marvellous a change had taken place. I doubt if many persons have witnessed a similar occurrence. The temperature of the house was 75°, after a very warm day.

Another good way to trap woodlice is to have some small seed boxes, in the bottom of which put some dry moss; examine these every morning over a pail of hot water, and if any are in the box shake them out into the pail. Sugar and water, in which a little arsenic is mixed, will also destroy the ants.—FOREMAN X.

THE HOME OF SHERRY.—This is how Jerez, from which sherry takes its name, is described in "Sell's Commercial Intelligence," by one who has recently visited that quaint picturesque spot and become acquainted with the community there. The streets are wide, and dotted with Orange and Acacia trees; and several squares are made quite gay with flowers and shaded with Palms or other umbrageous foliage. The market-place is bright and lively; and the numerous rows of snow-white houses, with emerald mouldings and balconies, indicate that the inhabitants are in favoured quarters. But the chief attraction of Jerez is the wine stores, which are built on the outskirts of the town, and surround it as with a breastwork. The Vines, clinging to the chalky slopes and ridges of the more distant hills, are reared on a white compact soil termed *albariza*, from which the highest class wines are derived, and develop, when matured, a remarkable flavour. The coarser qualities of wines are produced from Vines on the lower slopes and valley from a dark alluvial soil. Hence the best sherry is produced from a magnificent Grape grown in exceptionally suitable soil under most favourable climatic influence, and Vino de Jerez has no superior among the white wines of the world.



HARDY FRUIT GARDEN.

Culture of Cob Nuts and Filberts.—To establish a plantation of Nuts young suckers should be obtained from fruiting bushes and planted, shortening them to 1 foot. A light and open position suits Nuts, with soil of a friable character, and having a well-drained subsoil.

Growth the first season must be confined to one stem, and this encouraged to grow erect and vigorously. The following season shorten to 18 inches, and when fresh growths push select six of the best placed. Train these to a hoop, tying them on the outside, so as to form a basin-like framework. The next season the six shoots must again be shortened to about 4 inches, which will result in securing twelve shoots if two are trained from each. When side growths push pinch them to five leaves, and encourage the main branches to extend until of the desired height. This method of training Nuts keeps the bushes open in the centre. Sunlight and air can freely circulate, and spurs of a fruitful character ensue.

Pruning.—The leading growths require shortening to cause the production of side growths during the formation of the bushes, and closely shortening after the bushes are fully formed. The side growths produce the flowers. When the small pink pistillate blossoms have opened, and the catkins or staminate flowers have shed their pollen, the pruning may be carried out. The shoots bearing catkins may then be shortened closely back, as these are invariably long. Unfruitful wood may also be dealt with similarly. Strong sappy shoots can be entirely removed. Twiggy shoots with blossom buds at the points must be retained entire. Cut back old fruiting shoots to half an inch of the base. Do not allow spurs to become too crowded or elongated, and when a branch is declining in vigour from any cause, select a promising growth from the base to take its place. Keep the bushes well balanced with wood of medium strength.

Planting Strawberries.—A piece of good ground, thoroughly well prepared by deep digging and liberal manuring in the course of the winter, should be selected for spring planting of Strawberries. The young plants for the present planting ought to be those which were late or small in size at the time of the autumn planting, and in consequence were inserted in small beds close together, for the purpose of strengthening before finally placing in permanent rows. Such plants will lift from their winter quarters with plenty of fibrous roots and soil attached. New stock which has to be procured seldom has roots with soil attached, therefore the fibres must be carefully spread out on small mounds of soil, and properly covered.

Soil that is very light should be well trodden before planting, and the ground must be made firm about them afterwards. It is better not to mulch between the rows at first, so that the soil can have the benefit of sun and warmth, which will cause growth to be vigorous. Hoeing between the plants can be practised frequently for the purpose of keeping down weeds and accelerating growth. In May a light mulching will then be of advantage, and tend to the conservation of moisture. If flower trusses show on these plants promptly nip them out, for by no means are the plants strong enough to bear fruit the first season.

Blackberries.—The cultivated or garden forms of Blackberries like to grow in a sheltered position where strong winds cannot damage them. They require soil of a rich strong character. Before planting it ought to be deeply cultivated and enriched with manure in a decomposed condition. The Parsley-leaved variety is one of the best. Planting may be done now if healthy young plants with a fair number of fibrous roots are procurable. Insert them 5 feet apart in the row or position selected. If several rows are planted the distance between them ought not to be less than 8 feet. Cut the plants closely down after planting, so that the resulting growth may be as strong and vigorous as possible.

In every way they need similar treatment to Raspberries, except in the training, which necessitates the long canes Blackberries produce to be laid-in to the stakes or trellis in a more or less horizontal manner. A close form of trellis is not absolutely requisite, but stakes may be firmly fixed 2½ feet apart, and the canes trained upon them. It will probably take two seasons to establish good fruiting plants. Plenty of manure must be applied annually, because, like Raspberries, they are gross feeders. Retain the best canes annually, and cut out the weak. Four or five will be enough for each stool.

Completing Pruning.—All pruning of fruit trees and bushes should be completed forthwith. Sap is now becoming active, and there is a loss of force when pruning is done very late, because the sap which ought to have been stored in the fruit buds is distributed in a number of superfluous growths. When the prunings have been cleared away dress the ground between Currants, Gooseberries, and Raspberries with manure.

Gather all prunings of trees and bushes, as well as other rubbish, into a heap and burn them. If the burning is done steadily, more in the way of a smother than a fire, a valuable heap of charred refuse will result. This can be spread over the roots of trees and bushes, and it will act beneficially in furnishing potash.

FRUIT FORCING.

Cherry House.—The main art in forcing Cherries is attention to the ventilation; a free circulation of air should pass through the house whenever the temperature exceeds 50°, the amount of air being regulated by the condition of the outside atmosphere. Fire heat need only be employed to prevent the temperature falling below 50° in the daytime, and to maintain a night temperature of 40° to 45°. Attend to fertilising the blossoms with a camel's-hair brush or a feather. Aphides generally appear just as the trees set their fruit. They must be destroyed, or they will ruin the growths and spoil the Cherries. Grubs also infest the foliage; one kind of caterpillar rolls itself up in the leaves, and can be extirpated by squeezing, but another encases itself in a web on the under side of the leaves, and they appear as if scalded, and from the foliage the pest makes its way to the flowers and devours them. The surest means of riddance is to examine the trees occasionally and destroy the grubs.

Peaches and Nectarines.—*Earliest House.*—Now the fruit is stoning the temperature must be kept as equable as possible. Too high a temperature, especially at night, is not favourable to the process, and sudden fluctuations often cause the fruit to drop wholesale. The temperature should be continued at 60° to 65° at night in mild weather, 55° to 60° when severe, 60° to 65° on cold dull days, 65° to 70° when mild but sunless, 70° to 75° with gleams of sun, ventilating early and freely under favourable climatic conditions. Thinning the fruit must be seen to, not allowing twice as many fruits to stone as are to be left for the crop, but a few more than the required number should be retained to meet casualties in stoning. One fruit to a square foot of trellis covered by the trees is a capital guide. Small fruited varieties may have the fruit left a little closer, and vigorous trees will carry more than weakly trees. Overcropping, however, must be strictly avoided. Nectarines require the same space as Peaches to have fine fruit.

Secure all the shoots to the trellis as they advance in growth, stopping any that are likely to exceed 12 to 15 inches at those lengths, and if the pinching results in laterals stop them at the first leaf. Shoots retained to attract the sap to the fruit should be stopped to one leaf. Extensions must be trained in their full length, pinching laterals at one joint as made. Syringe the trees in the morning and afternoon when the days are fine, but damping the paths and borders will be sufficient in dull weather, with an occasional forcible syringing to keep red spider under. If the pest gain a footing extirpate it by the prompt application of an insecticide or a solution of petroleum emulsion, carefully following the directions for use. Inside borders must be kept duly supplied with water or liquid manure in a tepid state, but avoid over-stimulation whilst the fruit is stoning.

Second Early House.—Disbudding must be proceeded with gradually, and the successional bearing shoots should be laid in as soon as they are sufficiently advanced in growth. Thinning the fruit must be attended to after the remains of the flowers are cast. Remove all twin fruit, the smallest, that on the under side of the branches, and the badly placed, leaving three on a branch of 12 inches length, to be afterwards reduced to two on a strong, and one on a weak branch, when of the size of marbles. Only one fruit, as a rule, should be left on each bearing shoot, but two may remain if there be a deficiency in other parts of the tree. The fruit will rapidly swell to the size of small Walnuts, the temperature by that time having been increased to 55° to 60° at night, 60° to 65° by day from artificial heat, and 70° to 75° from sun heat, with a free circulation of air from 65°, avoiding cold and drying currents. Syringe the trees twice a day in bright weather, and occasionally in dull weather, with damping of the floors once or twice a day will keep red spider under and maintain a genial atmosphere.

Succession Houses.—Trees now in bloom require a free circulation of air, or such as will keep the atmosphere buoyant with sufficient fire heat to prevent sudden depression of temperature, maintaining 50° at night, or a few degrees less on cold nights. A temperature of 50° to 55° will be suitable in the daytime, advancing to 60° or 65° from sun heat with free ventilation. Shake the trellis or trees occasionally to distribute the pollen, or preferably, pass a camel-hair brush or feather over the flowers that have ripe pollen once a day, and give extra attention to the shy-setting varieties by conveying pollen from others that produce it in abundance, as, for instance, Royal George and Stirling Castle Peaches, also Elruge Nectarine. Keep the paths well damped on fine days, and be more sparing of water when the weather is dull and cold.

Late Houses.—The roof-lights need not be put on until the buds show the silvery integuments that envelop the floral organs, but they are not safe after the blossoms show colour. Trees under fixed roots are more forward, the buds being in various degrees of expansion. Where syringing has been practised it must be discontinued as soon as the anthers show clear of the corolla, but damp the floor in the morning and afternoon, leaving a little air on constantly at the top of the house. No more fire heat should be used than is absolutely necessary, but after the flowers show the stamens a certain amount of warmth is needed, for when the atmosphere is cold and moist, and the flowering extends over a considerable period, the fruits do not set well; therefore after the blossoms open maintain a temperature of 40° to 45° at night, 50° to 55° by day artificially, with a free circulation of air, advancing to 65° with sun. In the case of weak trees having a superabundance of blossoms, it is advisable to remove the flowers from the under side of the shoots or the back, as the trees may be against front or back trellises. The borders must be kept healthfully moist, and weakly trees may be supplied with liquid manure.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE favourable change in the weather will have been taken advantage of by bee-keepers to make a thorough examination of stocks without injury to either bees or brood, which is unusual at this early date. It is important that bee-keepers should know as early as possible the condition of each individual stock in the apiary. Often in a backward season this cannot be done for at least six weeks after this time. We do not recommend a useless manipulating of the bees during the dull short days of winter; but when the operation can be carried out under favourable conditions, it is a decided advantage. We then know what treatment is necessary to bring each colony to its full strength, so as to obtain a surplus from whatever source may be within reach of the apiary in that particular locality.

In some districts an early harvest is obtained from the fruit tree blossoms. Others again depend chiefly on the field Beans and White Clover, whilst some take a large surplus from Mustard, and last of all the Heather plays an important part in yielding a handsome return for the labour bestowed on the bees.

As the above are some of the chief honey-producing trees and plants in this country, and flowering as they do at different times, it shows how necessary it is for the bee-keeper to make arrangements so as to have his hives crowded with bees when the honey flow comes.

It is encouraging at this early date to report that all the stocks recently examined are in excellent condition. The bees are numerous; more so than they often are at the end of April. Breeding, too, is going on apace. In some of the strongest colonies there are several frames of brood in various stages of development, and as the early spring flowers are now plentiful, within easy reach of our apiary, the bees are working freely on them, and this is doubtless one reason why they are doing so well. The real pollen obtained from flowers is preferred to the artificial article.

USING DARK HONEY.

As dark honey was so plentiful last season, many bee-keepers doubtless kept it in stock for feeding purposes. We have often heard it stated that honey that has been spoiled for commercial purposes by the admixture of honeydew should also be condemned for feeding purposes. The past season, however, has exploded that fallacy, as we can testify from personal experience to never having had bees in such good condition before, and they were all fed on dark honey. During our recent examination we found many of the combs quite perfect, and not a cell uncapped. These were in the top storey on hives which were doubled last summer, and were left in this condition throughout the winter. We shall have something to say on this system in future notes. At present it suffices to say that all are in perfect condition, which shows how advantageous it is to sometimes leave the beaten track and experiment on new lines.

Hives that are short of stores, owing to the removal of part of the surplus last autumn, may now have a couple of frames of sealed stores given. One side of the comb should be slightly bruised before being placed in the hives. This will cause the bees to commence breeding at once. The combs containing stores ought to be placed on the outside of the brood nest, allowing at least half a dozen empty combs, or those partly filled with stores, in the middle of the hive. The queen will thus have ample room for ovipositing. If there are not sufficient empty cells her laying powers would be retarded.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- F. A. Haage, jun., Erfurt.—*Seeds*.
 E. H. Krelage, Haarlem, Holland.—*Roots, Bulbs*.
 Little & Ballantyne, Carlisle.—*Farm Seeds*.
 G. Masters, East Molesey.—*Seeds*.
 Pinehurst Nurseries, Pinehurst, U.S.A.—*Plants*.
 E. Pynaert Van Geert, Ghent.—*Wholesale List*.
 F. Sander & Co., St. Albans.—*Orchids and New Plants*.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Cutting-back Cedar (H. T. H.).—The stems, 3 to 4 inches in diameter, of trees twenty-five years planted, do not usually break again when cut down to within 3 feet of the ground. As, however, they have been clipped at the lower part, there is a possibility of buds remaining dormant at the base of the branches next the stem, and starting on the trees being cut back as you describe. We should certainly try them, operating towards the end of March and during warm moist weather. About the Box and Yew recommending there need be no question, as they shoot freely from the stems, of course, when these are living, and soon form excellent screens with due attention to regulating the young growths. The best time to cut back both Box and Yew is during mild weather in April, and it may be done as much as desired, even to the bare stem, and to 1 foot from the ground.

First Crop for a Neglected Garden (Somerville).—The first consideration is to remove all weeds of a perennial character by the roots and burn them. Then spread the ashes on the ground and have this well dug with a fork, giving a coating of manure, if necessary. As the greater part has been used for a fowl run it will perhaps be quite rich enough without manure, and give little trouble as regards weeds. We should not hesitate to sow or plant any kind of vegetables desired in it the first season, but as you particularly mention "first crop," we may say that not any equals Potatoes, for they require cleanly culture, and leave the land in good condition for succeeding crops. If the ground has any grass other than couch it may be desirable to trench it, and thus get rid of the weedy surface, as well as deepen the soil for growing crops. All perennial weeds, such as bindweed, docks, dandelion, and especially couch and the creeping bent grasses, must be carefully extracted.

Vines from Eyes (H. S.).—It is not possible to secure strong canes from eyes inserted now, and with no special means at command to forward them, such as are suitable for fruiting in pots the following year. To do that the eyes must be inserted not later than the early part of February, be given bottom heat to start them quickly, potted as soon as rooted, shifted into 6 or 7-inch pots by this time, and when these are filled with roots transferring the Vines to 12-inch pots. The Vines must have a light well-heated house, with a temperature of 60° to 65° at night, 70° to 75° by day, and 80° to 90° from sun heat, training the rods about 1 foot from the glass. As you can only get canes 12 to 18 inches in length and of penholder thickness the first year, you should act on the cut-back system—namely, cut the one-year canes down to one eye, allow these to start and grow a few inches, then turn out of the pots, shift into 6 or 7-inch pots after removing the soil, and when established—this being facilitated by keeping rather close and shaded for a few days—shift into the fruiting pots. You will then secure, under good management, canes of the length and strength desired for bearing in pots the succeeding season.

Madresfield Court Vine not Growing (Idem).—We are not surprised at the Vine placed in a space of only 2 feet square not growing satisfactorily, as the roots could hardly have been spread out at planting and given a chance of taking proper hold of the soil. Of course there may be other reasons for the Vine not thriving, such as overwatering and destroying the roots, or, on the other hand, keeping too dry, so that growth cannot possibly take place. In the absence of particulars we cannot otherwise account for the lack of progress. Perhaps it has been injured in some way, or sufficient time not allowed for it to start into growth.

Tennis Lawn (J. V. H.).—There is no orthodox size for a lawn tennis ground, but it should not be less than twice the length of the width of the net, which is usually 36 feet or 42 feet wide, and it is better to have too much rather than too little room: hence 30 yards and 18 or 20 yards wide is preferable to a lawn only just large enough, looking much better and being pleasanter for all concerned. A full-sized tennis "court" is 78 feet long and 36 feet wide.

Winter Salading (G. W.).—As there is a difficulty in obtaining Lettuce with good white hearts during the months of February and March, we should advise you to rely upon blanched Endive during that period, and Chicory, which are admirable winter salads. Endive may be readily blanched by tying up the tops of the leaves, and inverting a pot over the plant, stopping the hole with a stone. A slate laid flat on the plants is a method adopted by some, and answers well. Chicory is readily forced in darkness and heat.

Soft Rot in Celery (W. S.).—The "head" has the central part decayed, and brown or black. It is what is termed "soft rot," and by some regarded as due to bacterial agency, but we failed to discover any micro-organisms of that nature in your specimen, or any form of life of a fungoid character. A small portion of the decayed part swarmed with eelworm, commonly called stem-eelworm, *Tylenchus devastatrix*, also innumerable eggs of the eelworm. We do not consider the eelworm the cause of the "soft rot," but rather as the consequence of the decay set up by excessive moisture in the heart of the head of Celery, and the cause of that decay we should attribute to the sewage. The eelworms may have been aided by the soft character of the central stalks, and thus have pierced them and furthered, if not produced, the rot, for it is difficult in such cases to separate or distinguish cause from effect. White Celeries are no more tender than red varieties, yet not all, for Sandringham is one of the very best for late use. We should give the land a good liming, say half hundredweight per rod, and point in shortly after slaking, then supply a top-dressing of kainit, $3\frac{1}{2}$ lbs. per rod, and leave for the rains to wash in.

Diseased French Beans, Cucumber, and Tomato Plants (J. and S.).—The whole of the plants are "cankered" at the roots and more or less in the root stems, and in these are the threads of a fungus, *Fusarium lycopersici*, which is popularly known as "sleepy disease." The plants collapse or "blister" in the leaves under powerful sun because their feeding roots are destroyed, hence not able to supply sap in proportion to the water evaporated from the leaves. We failed to detect any trace of animal pests at the roots or in the soil, though we subjected all the samples to careful microscopical examination. The soil is practically devoid of lime, and to this may probably be due the presence of the fungus. We should supply a dressing of best chalk lime, preferably air-slaked, using half a pound per square yard, and where possible pointing in lightly with a fork. In the case of soil for potting or beds we advise $2\frac{1}{2}$ per cent. of the lime named to be mixed with it, and some little time before use, turning once or twice to insure even incorporation; or, as equally effective, and at the same time supplying both lime and phosphoric acid, basic slag phosphate, 1 lb. per square yard, pointing in as advised for the lime. For mixing with soil use 7 lbs. of basic slag phosphate per cubic yard, incorporating thoroughly. Either lime or basic slag phosphate would be likely to give the desired relief, and the soil would be further improved by an addition of wood ashes; or kainit may be used in the proportion of 2 to 3 ozs. per square yard for top-dressing. The soil also appears deficient in grit, and would be improved by the addition of one-sixth of old mortar rubbish. We cannot analyse in any case, hence express no opinion on the water; but as this does not act prejudicially, or appear to do so only under the influence of powerful sun, we can hardly consider injury to arise from its use. If you want an analysis it may be had for a reduced fee from Dr. Voelcker through Royal Horticultural Society if you are Fellows.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. F. P.).—1, *Linum flavum*; 2, *Freesia Leichtlini*; 3, *Cypripedium superbiens*; 4, *C. barbatum*. (A. L. B.).—1, *Maranta Veitchii*; 2, *Adiantum trapeziforme*; 3, *Ficus repens*; 4, *Veltheimia viridifolia*; 5, *Lachenalia Nelsoni*; 6, *L. pendula aureliana*. (J. G. T.).—1, *Adiantum pubescens*; 2, *Asplenium flaccidum*; 3, *Cattleya Trianae*. (H. M. C.).—1, *Dendrobium nobile*, fine dark form; 2, *Cypripedium insigne*; 3, *C. superbiens*; 4, *Pteris argentea*; 5, *Polystichum capensis*. (H. S. E.).—1, *Cupressus Lawsoniana*; 2, *C. L. erecta viridis*; 3, *Thuopsis borealis*; 4, *Retinospora ericoides*. (Park Hill).—*Cupressus punebri*. (Interested).—The Anemone is Rose de Nice, which can be procured from most seedsmen of repute. (W. B.).—The Ayle is Dumelow's Seedling, slightly malformed. (P. C.).—1, *Prunus sinensis flore-pleno*; 2, *Boussingaultia basseloides*; 3, *Deutzia gracilis*; 4, *Crassula lactea*; 5, *Veltheimia viridifolia*; 6, *Angræcum sesquipedale*.

COVENT GARDEN MARKET.—MARCH 1ST.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Cobs ...	30 0	35 0	St. Michael's Pines, each	2 6	5 0
Grapes, lb. ...	1 6	2 6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 1 0
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz.		
Bouvardias, bunch ...	0 4	0 6	bnchs. ...	6 0	8 0
Carnations, 12 blooms ...	1 6	3 0	Narcissus, doz. bnchs. ...	1 0	2 0
Daffodils, single yellow, bch. 12 blooms ...	0 6	1 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, double, bunches	0 4	0 6	Pelargoniums, doz. bnchs.	6 0	10 0
Eucharis, doz. ...	2 0	3 0	Roses (indoor), doz. ...	2 0	3 0
Freesia, doz. bnchs. ...	2 0	4 0	„ Red, doz. ...	6 0	8 0
Gardenias, doz. ...	4 0	6 0	„ Tea, white, doz. ...	2 0	4 0
Geranium, scarlet, doz. bnchs. ...	6 0	8 0	„ Yellow, doz. (Perles)	2 0	3 0
Hyacinths, Roman, bunch	0 6	0 8	„ Safrano, doz. ...	1 0	1 6
Lilium lancifolium, white	0 0	0 0	Smilax, bunch ...	2 0	3 0
„ longiflorum, 12 blooms	4 0	6 0	Tulips, bunch ...	0 4	1 0
Lilac, bunch ...	3 0	4 0	Violets doz. bunches ...	0 6	1 6
			„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	9 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



SMALL PROPRIETORS.

VERY small indeed, and a vast number of them, all very hard working and industrious, and very agricultural. This land is not within the confines of Great Britain, but is over seas; near enough to be counted as our neighbour, and near enough for us to learn something of the methods of this most methodical people.

If we have not visited Belgium in actual bodily form, we have been taken there in spirit by several of the writers to this our good old Journal. Our friends have gone, not so much to view Belgium from an agricultural as from a horticultural point of view. They have told us much of interest, and much that has made us inclined to be a bit shame-faced. They are such thorough energetic workers, and mean so to get on. Did we not read of one of the gardeners interviewed who learnt English that he might read in the original the collected wisdom to be found in our pages? Yes, we feel sure it was. And can we point to many English working gardeners who have taken up the study of French or German so that they might read gardening journals in those tongues?

We have just looked up a few facts about Belgium. The area is 11,373 miles, with a population of something over 7,000,000. We find exports run somewhat thus—Yams, £6,617,400; cereals and flour, £6,614,760; machinery, £4,324,400; with an annual output of over 20,000,000 tons of coal. Pretty good for so small a country, but what we want to be at is the manner by which they work the land so as to allow of nearly £7,000,000 of agricultural produce. It can only be arrived at by what may properly be termed intense culture and spade husbandry. We are not going to compare the relative position of the agriculturists themselves—viz., English working farmers and their Belgian brothers, for we know full well that no Englishman could or would exist on the pittance that contents the foreigner; nor would he with his wife and children endure such hard and continuous toil.

We English cannot quite grasp the idea of the smallness of the Belgian farms; in fact we should hardly call them farms, rather allotments. The average size of the farm is $7\frac{1}{2}$ acres, but in one district there are 22,000 acres divided into 6328 farms, thus making the farms not more than 4 acres apiece. Only a quarter of this land is pasture, and the number of cows kept is 2990, and horses 744. The cows cannot have a very wide range of cow pasture, but must be kept entirely in stalls save when allowed to graze, well watched, by the roadside. A cow requires an enormous bulk of food, be the quality what it may, and this food has all to be cultivated. We mean this in contradistinction to grass land which may have been laid down for generations.

We wonder how many of these holdings are required to sustain a horse. He must be a co-operative horse, and we wonder how his many masters contrive to divide his services. We fancy there must be a good deal of spade labour, no waste in fences, and little in occupation roads. How tiny the plots must be, and how clean. These people help themselves, and also receive much valuable assistance from Government.

As long as fifty years ago the Government organised a number of agricultural societies, who in return for certain money grants gave in an annual report information respecting the state of agriculture in their districts. These societies promote exhibitions, encourage experimental work, and disseminate agricultural literature and foster a spirit of co-operation. About the experimental work there is one very good feature. These small farmers undertake certain experiments in manuring, and in cultivating new or improved varieties of seed; and they receive pay in proportion to the trouble they take. They work out their own salvation as it were, and receive rewards into the bargain.

There is a farm society of Heryele, which consists of 6000 farms, and these farmers are expected individually to do something in the way of experiment for the benefit of the community. They have become quite *au fait* in the region of fertilisers, and fully appreciate the value of new and improved seeds, of careful cultivation and harvesting; and this is done, not by men who have had the advantages of leisure and college courses, but by men who literally earn their bread in the sweat of their brow, for it must be collar work all the year round to get a living off $4\frac{1}{2}$ acres of ground.

Of course we find co-operative creameries. With this class of farms we could expect no other, and as an adjunct to this is established a society to encourage the best milker—i.e. the cow who produces the best quality of milk. There are cows and cows, and where a man has only one or two, he wants them to be super-excellent.

Then comes the help afforded by the credit banks. Then there is a peasants' league of 17,000 members, who purchase feeding stuffs and manures, and who have seventy credit banks, with deposits amounting to over £20,000. Then, again, we find stock insurance companies a little on the lines of our pig and cow clubs. The premiums are not extravagant— $1\frac{1}{2}$ d. per month on £4 value—so that every class of animal comes under the schedule.

They do not stop at cattle insurance, but go on to fire risks, and

have made excellent terms with some existing companies. They do not miss a point, these good Belgians; they are alive to their difficulties, and they are also fully prepared to meet and overcome them.

They have not a big country, nor one that is by nature very fertile, but by constant labour, and that of the best (self-interested), they make it a veritable Garden of Eden. A farm of 4 or even 7 acres extent is not beyond the purchasing powers of a working man, and we expect it is this hope of ultimate possession that makes the farmer rise early and toil late.

There is something fascinating about the possession of land; even the ownership of a little field makes us feel we have a stake in the country—a tangible something.

WORK ON THE HOME FARM.

With the advent of March with its high winds and the land in more suitable condition, farmers will everywhere be thinking of sowing Barley; but what Barley are they to sow? This is a very important question, and one not easy to answer. Generally speaking, we should say that the use of newly selected seed in no case shows such satisfactory results as in the case of Barley. To attain perfection for malting purposes every grain should be as like its neighbour as peas from one pod. Wheat and Oats are different, for though fresh seeds may be desirable as increasing the quantity of produce, the quality is not very highly affected.

What is more important than anything in selecting seed Barley is in having it free from smut. We see people recommending the dressing of smutted seed with blue vitriol. We say do not use such seed at all. We have ourselves done so, and although the seed was doubly and carefully dressed, the crop was heavily smutted.

Get the cleanest seed you can, and then dress it with vitriol. We believe in this dressing, but a badly smutted stock takes years to cure. Prevention is the best policy, so use clean seed and use preventive measures.

Some Barleys are much more liable to smut than others, Goldthorpe and Standwell particularly so, and great care must be exercised in selecting stocks of these varieties. Pedigree stocks are almost always clear of smut for a time, and if one considers that 1 qr. at 20s. will sow 4 acres, the extra outlay on a crop of 5 qrs. per acre only amounting to 2s. 6d. per qr., and that this will be reduced in the next year's crop to about 2d. per qr., the great advantage of a yearly purchase of pedigree seeds will be fully apparent.

We are thrashing again, and the weather is very favourable, being fine and dry. We are fully occupied with cross-cutting fallows, and the land is turning up in very nice condition, drier than we had expected. With a continuance of dry weather we shall be able to drag and harrow and complete the fallowing and cleansing process; fortunately the fine autumn left little to do. Prices do not mend, everything is low—grain, Potatoes, and meat.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. $51^{\circ} 32' 40''$ N.; Long. $0^{\circ} 8' 0''$ W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1899. February.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches.
Sunday 19	30.195	42.2	42.1	W.	42.4	53.3	38.8	68.2	34.3	—
Monday 20	30.210	44.7	43.6	E.	43.2	47.1	42.6	50.9	37.4	—
Tuesday 21	30.327	41.8	39.8	E.	43.2	47.1	38.9	78.9	33.6	—
Wednesday .. 22	30.383	37.9	35.8	E.	41.9	50.1	32.9	79.9	25.8	—
Thursday .. 23	30.296	34.3	32.0	E.	40.1	51.2	27.9	77.8	24.9	—
Friday 24	30.318	32.6	32.1	E.	39.1	47.0	26.2	57.9	24.8	—
Saturday 25	30.360	34.0	34.0	N. E.	38.2	43.8	30.2	71.7	23.2	—
	30.298	38.2	37.1		41.2	48.5	33.9	69.3	29.1	—

REMARKS.

19th.—Fog early; a little sun at midday; foggy about sunset, but clear later.
20th.—Overcast throughout, with frequent slight drizzle.
21st.—Bright sunshine throughout, but cold breeze; clear night.
22nd.—Cold, with bright sunshine.
23rd.—Sunshine all day, but hazy at times. A little cloud in evening.
24th.—Foggy early and late; sun visible all day, but little bright sunshine.
25th.—Fog early; bright sun all day; clear night.

A fine dry winter week.—G. J. SYMONS.

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REALLY GOOD SEEDS

AT MODERATE PRICES

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At a Third or a Fourth Usual Prices.

Nothing gives so much Cut Bloom at so small a cost or so little trouble. To get best results SOW AT ONCE, as directions sent with each Collection.

SPECIAL VERY CHEAP OFFER.

COLLECTION No. 1.—Ten Very Good Varieties.

50 Seeds of each in separate packets, 1s. 3d.

Emily Henderson, white; Blanche Ferry, pink and white; Mrs. Eckford, primrose; Royal Robe, pale pink; Splendour, rich deep rose; Firefly, rich bright carmine; Meteor, salmon and pink; Emily Eckford, bright pale blue; Countess of Radnor, pale heliotrope; Monarch, dark bronzy-purple.

COLLECTION No. 2.—Ten Very Choice Varieties.

50 Seeds of each in separate packets, 1s. 9d.

Blanche Burpee, finest white; Queen Victoria, pale yellow; Venus, pale lemon-pink; Lovely, delicate pink; Her Majesty, soft rosy pink; Lady Penzance, bright pale rose; Mars, intense glowing cardinal; New Countess, fine pale heliotrope; Countess of Powis, orange-salmon and pale pink; Stanley, large bronzy-purple, the best dark Sweet Pea.

Special Price for the Two Collections, 2/6 Post Free, with a packet each of White and Pink Cupid (25 Seeds) FREE OF CHARGE.

COLLECTION No. 3.—Ten Newest Varieties.

50 Seeds of each in separate packets, 3s.

Sensation, blush white; Modesty, blush pink; Prima Donna, large pink; Lottie Hutchins, buff, flushed pink; Oriental, bright rose; Triumph, salmon and pink; Gorgeous, orange and pink; Captivation, rosy-purple; Colonist, lilac-rose; Salopian, deep mulberry-red.

Special Price for the Three Collections, 5/-, with a packet (25 seeds) of Pink and White Cupid, and four striped varieties (50 seeds of each) FREE OF CHARGE.

All Seeds are warranted New Seed of 1898 Crop and carefully hand-picked, all small and doubtful Seeds being taken out.

THE BEST SIX TOMATOES

In cultivation; often sold under other names to get fancy prices. Each packet contains about 200 seeds. Perfection, 3d.; a special good strain, Ham Green Favourite, 3d.; Roseleigh Gem, 3d.; a grand new selection, large smooth, Challenger, 3d.; Golden Perfection, 3d.; EARLY OPEN-AIR, the best for outdoor work, 3d. Collection, 1s. 3d., post free. If ordered separately, 1d. each extra for postage.

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Each packet contains 10 seeds. Lockie's Perfection, Rollison's Selected Telegraph, Covent Garden Favourite, and Marvel, 6d. each; postage 1d. each extra; or the Collection, 2s. post free.

FULL LISTS POST FREE ON APPLICATION

Please mention this paper.

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INSPECTION of OUR NEW RANGE of HOUSES, just completed, is cordially invited by

HUGH LOW & CO., BUSH HILL PARK, MIDDLESEX.



We beg to announce that our Illustrated Descriptive CATALOGUE of our Home Grown, Selected, & Tested Garden Seeds is now ready and will be sent gratis and post free on application.

A Perusal will Repay.

CHARLES SHARPE & CO., Limited, SLEAFORD.

CHRYSANTHEMUM.—New Late Red, L. CANNING, F.C.C., December 10th, N.C.S. Rooted Cuttings, 1/- each; 10/- dozen. Trade price on application. —A. FELGATE, Jun., Hersham, Surrey.

150,000 BEGONIA TUBERS.—Large erect-flowering Singles, 12 for 2/3; 100, 15/-; Doubles, 12 for 2/6; 100, 16/-, for cash; List free.—JOHN WELLS, Begonia Nursery, Ryarsh, Malling, Kent.

FOR SALE.—GERANIUM CUTTINGS. RASPAIL IMPROVED, the best Geranium for the cut flower trade, 9d. per doz., 5/- per 100; special price per 1000. Free for cash with order.

A. L. CHALMERS, St. Peter in the Wood, Guernsey.

CHRYSANTHEMUM PLANTS.—Strong and reliable, in best varieties from 6d. per dozen, 3/- per 100; all carefully packed and delivered free for cash with order. Send for our Price List.—C. E. & F. W. LILLY, Ltd., St. Peters, Guernsey.

ASPARAGUS.—This delicious vegetable does not require half the expense usually incurred. For simple instructions see SEED LIST, free on application. Strong roots from 2/6 per 100.—RICHARD SMITH & CO., Nurserymen and Seed Merchants, Worcester.

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Journal of Horticulture.

THURSDAY, MARCH 9, 1899.

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VOICES OF THE PAST.

IT has been said of old "the world knows nothing of its greatest men," and similarly it might be asserted that the world knows nothing of its greatest gardeners. There were brave men before Agamemnon and poets before Homer. The world makes its heroes out of those whom circumstances have contributed to advertise at populous centres, while there have always been modest inglorious savants hidden away in quiet villages and suffered by the all-pervading press to lead a placid life in pursuit of the real pleasure of self-development.

It is to these great unknowns of past ages, the rule-of-thumb men, who, inheriting from their predecessors an accumulated fund of experience, have handed it down to us with something superadded of their own, that our gratitude is due. They laid the foundations upon which the imposing edifice of modern scientific literature is based.

Thus the old workers and old writers have a strong claim to our gratitude. We are too thankful for all they have taught us to employ ourselves in pointing out their deficiencies. Moreover, we feel that if they were living and teaching in our times, they would give very different series of instructions from those which have, nevertheless, been so useful. Let us also remember that many, if not most, of the old writers on gardening were not specially equipped by scholastic acquirements, but rather grounded in practical work and fitted by self-improvement for advocating the extension and the advancement of horticulture. Such men—practical gardeners—laid the foundation and commenced the superstructure of British gardening.

Of the present century gardeners we may remark that they received considerable assistance in obtaining information and in disseminating practical knowledge, from the garden and the "Transactions" of the Horticultural Society of London. This, however, represented the classes rather than the masses. It is to London's "Gardeners' Magazine" that the palm must really be awarded for initiating gardeners into the sound all-round practical principles of garden literature. Then in 1841 came the "Gardeners' Chronicle," a weekly journal on

horticultural and agricultural subjects, which pursued and yet follows a course that may be said, in the highest sense, to embody science with practice. Still there were left vast numbers of individuals who considered themselves uncatered for by the gardening press, or found that press from its costliness to be beyond their reach. To supply this deficiency in horticultural matters the *Cottage Gardener* was founded by the late Mr. G. W. Johnson, and the first number appeared on October 5th, 1848.

Going back to the first issue of the *Cottage Gardener*, we read, in the introductory chapter, that its prime object was *utility*, for the gardener, amateur, and cottager, who, severally, desired instruction "how to grow the most and the best crops." In order to effect these results *notice* would, from time to time, be made of the "varieties distinguished for qualities most desirable, modes of culture found to be most successful, most appropriate manures, with modes of applying them most economically, and rotation of crops found advantageous on various soils." Particular attention would also be paid to the diseases of cultivated plants, and to the insects which attack them, with advice on their eradication and extirpation. Plans of gardens were also promised, with notes on their arrangement.

"To enable us to attain these objects," says the Editor of the *Cottage Gardener*, "we have secured the aid of some of the best practical men of the day, and to facilitate their labours we solicit assistance from all others of like acquirements, whether professional or amateurs; but, in all we examine and all we recommend, experience shall be our touchstone."

"No one values the services of science more highly than we do. We well know that it points out and illumines the path of the gardener; it aids and sustains him in his progress along that path—but the path itself is Practice. Upon this we shall place our foundation."

Thus wrote the founder of the *Cottage Gardener*, and every reader of its twenty-five volumes knows how truly the works reflected the words. The *Cottage Gardener* began its career without a motto, but it was clearly expressed in the introductory chapter, and manifested in every line of the articles, bearing as they did the stamp of *Practice* linked with *Science*. When upon attaining its thirteenth year the familiar title of *The Cottage Gardener* became subordinated to that now consecrated by more than a generation of time, the readers of the *Journal of Horticulture* suffered no loss. The transfiguration of name touched not its spirit, for with the *Journal of Horticulture*, as with the old *Cottage Gardener*, "Practice and Science" remains, and ever will remain, the abiding watchword.

Turn we now to the writers of the *Cottage Gardener* and *Journal of Horticulture*, "who, being dead, yet speaketh."

ROBERT ERRINGTON.

After the introductory remarks of the Editor the first article was from the pen of Mr. Errington (fig. 35). It was entitled, "The Week's Fruit Gardening," and the opening sentences clearly defined the scope of the teaching—"sound gardening practice, adapted to all who cultivate a garden." "Scientific terms," he says, "would be abstained from as much as possible," and "a plain style" be adopted, so as to render the subject familiar to the humblest cottager. Truly this contributor's articles are characterised by plain, trenchant Saxon and by sound knowledge of the subject in hand, as befitted a practitioner of "some forty years' experience."

Fruit gardening was Mr. Errington's particular *forte*; but, as might be expected, he had kitchen gardening in heart, head, and hand, hence numerous articles appeared from his pen on diversified subjects. On December 20th, 1854, we find him advertizing to the Potato disease as less malignant, and to the benefits to the working man of a cheap loaf. Thus humanity had a place in his large heart as well as the adornment of the pleasure ground and the forcing of fruits for the opulent. As an all-round cultivator freely giving of his bounteous experience he had few equals, and certainly no superior in knowledge.

THOMAS APPLEBY.

The second article was written by Mr. Appleby, who, in his opening statements, says "the culture of flowers is one of the most delightful and beautiful recreations to which man can devote the powers of his mind and body." Having, he tells us, tasted these pleasures for nearly half a century, the aim will be "to increase the taste and instruct the ignorant . . . make the culture of flowers

more general and the practice more easy," and thus have the satisfaction of "a mite cast into the treasury of human happiness."

Mr. Appleby treated of the flower garden in a clear, simple style, but in florists' flowers settled down into plain instructions. In these, and plant culture generally, both outdoor and under glass, he displayed considerable talent and inherent love of the beautiful. He told of all that was worth growing, and of everything in matters of culture that could be helpful and was essential to success. From



FIG. 35.—MR. ROBERT ERRINGTON.

specialities the writer passed into what may be termed generalities, such as "woodcraft," or the cultivation of trees and shrubs, growing Vines and Pine Apples.

JAS. BARNES.

No flourish of trumpets heralds the advent of Mr. Barnes into the arena, but every reader recognised the contributor to "London's Gardeners' Magazine" as a proved hand, and "good wine needs no bush." Very plain were his instructions about Borecole and Brussels Sprouts, even planting in October to have "heads and sprouts" in spring. The remarks on planting Potatoes in autumn, because for several previous years "the autumn-planted have been the only Potatoes of good quality and abundant in produce," were incisive. Experience and hard-headed practice are the dominant features of "Barnes of Bicton's" writing. Not that he was devoid of science, for a more practice-with-science article on the "Management of Soil" has not, perhaps, been given in less space, and yet more exhaustively on essential points, than his on page 7 of the first number of the *Cottage Gardener*. As a kitchen gardener Mr. Barnes was unrivalled, and was one of the "lights" of his time. He strove to secure abundance of food to the community, and, by mutual dependence and inter-communication, comfort to the cultivator. As indicative of the store set by vegetable growing, we may mention that the earliest probe given the contributors for information was by "Nemo," who wanted to know, and was told how to preserve his seedling Cauliflowers from the attacks of slugs. Then, as now, it was the "good old plan" of advising something hurtful to the pests, but harmless, and, better, profitable to the plant and culture. This was a predominant characteristic of this writer—make the soil right, then there will be a chance, not otherwise, of its producing healthy and full crops.

CUTHBERT W. JOHNSON, F.R.S.

This man of science, whose enthusiastic efforts in the cause of practical sanitation have conduced to the health and life of thousands, took "Filtered House Sewage" as his theme. The name suffices for the utility of the article cast upon such sound practical lines. Indeed, everything in the first issue of *The Cottage Gardener* was founded upon the broad principles of "prove all things"—the voice of the scientific as well as that of the practical man. Thus we find in all the issues of the publication from 1848 until 1899 practice combined with science. Of the voices that spoke in the initial

number none abides in the flesh, but now they are heard and remembered through their works with feelings of thankfulness.

DONALD BEATON.

Donald Beaton entered the list of contributors exactly a month subsequent to the paper's inception, which then necessitated a double number (sixteen pages instead of eight) "without extra charge." His task was "The Week's Window and Greenhouse Gardening," in which he secured his readers' confidence by bestowing praise where credit was due. "The cottager," he says, "who can manage to grow half a dozen of pot plants in his window—flower them well in summer, and keep them safe through the winter—may be said to be so far a good gardener." This encomium from such a source was music to the cottager's ears, which he knew or learned how to tingle so as to awaken and maintain interest. There does not appear, in his first article devoted to "Window Plants" anything of the botanist, the geographer, the hybridiser, or the experimenter—no, not even so much as that of the great gardener; but it teems with cogent reasons for avoiding this and doing that.

In his next contribution the habiliments of orthodoxy are discarded, and Mr. Beaton appears in his true racy character. He tells a tale about "a hobby-horse" which, "if fresh, is almost as difficult to manage at first as an Arab steed fresh from grass—the restlessness at starting is much the same with both, and each requires some time and management before he can be made to take to the road straight forward. But you will probably ask—What has that to do with gardening and pot plants? Very little I own. The subject, however, that is, giving directions in gardening to new beginners, is one of my hobbies, and in starting with it fresh last week it would take any direction but the straightforward course."

To name Donald Beaton amid gardeners draws forth needs of praise, hence his portrait will be peculiarly acceptable. Who has not profited by his writings? His forte was flowers—in the garden, window, and glass house. Who did not know, or had not heard of, the canny Scot, with his "hobbies" in giving directions to beginners, with rare talent of criticism, with genius adapted to increasing and improving plants and flowers, and with great power of invective exercised to inculcate sound principles, and to lead from "rule of thumb" into a better system of procedure?

We have given a brief retrospect of the departmental writers that illumined the first volume of the *Cottage Gardener*. None of those now to be considered had, so far as we know, any part therein, and we shall take them in the order of utility recognised by the founder of the paper—namely, fruit and forcing garden, kitchen garden, flower garden, florists' flowers, greenhouse and window garden, not however separating their work in other departments from that in which they shone brightest.

ROBERT HOGG, LL.D.

In a very valuable monograph of "The Garden Pea and its Varieties," Dr. then Mr., Hogg, adverts to the size of seedsmen's catalogues, and asks, "Have they done so to the same extent in utility?" Of course this refers to varieties of Peas, which then (January 20th, 1854), as now, were so multiplied in name as to lead to "nothing but confusion, disappointment, and annoyance." The monograph, illustrated by outline representations of the many varieties regarded as distinct, is a masterpiece of erudition, yet so plain in style and simple in words as to be easily comprehended.

Of Dr. Hogg's contributions on fruit culture it is needless to make any remark, they are too well known. His contemporaries who worked with him knew his worth, but posterity will estimate him by the work he did and the legacy he left to pomologists in "The Fruit Manual." It remains a memorial of one "head and shoulders above his fellows" in fruit classification, description, and knowledge.

THOMAS RIVERS.

The Sawbridgeworth nurseries have long been famous for Roses and fruits. The first were unquestionably Mr. Rivers' first love, as attested by "The Rose Amateur's Guide," published in 1837, and reached its fourth edition in 1846. This was solid testimony to the value of the book as tending to increase and improve the national flower. But fruits were very dear to his heart too, for he lovingly refers to trees of his boyhood days—to Pears, to Apples, to Nuts, to every kind of fruit in which youth delights. They did not quite satisfy him, however, good as they were; he longed for, and set to work to achieve their advancement by improved methods of cultivation and by Nature's plan of evolution—cross fertilisation.

Enthusiastic, methodical, "every inch a gardener"—and ever as he advanced going hand in hand with science—he accomplished more towards producing new and better varieties of fruit in a lifetime than had been effected by trusting to Nature and acting upon the principle of selection alone during centuries. In Apples, Apricots, Cherries, Cob Nuts and Filberts, Figs, Nectarines, Peaches, Pears, Plums, and Strawberries he left the impress of his genius, and many varieties bear the

name in prefix of their gifted author, who accomplished so much, through patient, plodding, persevering industry.

Mr. Rivers (fig. 38) was father of the dwarfing system of fruit culture, the trees being more under control and better adapted to both small gardens and commercial culture. He was also the founder of the orchard house, for though fruit trees had been grown in pots anterior to his time he first elevated the plan into a definite method, and showed the way to an "orchard" under glass—dwarf trees in a house, specially and economically constructed, entirely devoted to them.

J. ROYSTON PEARSON.

In the days of this contributor Chilwell Nurseries, Nottingham, were renowned for fruit trees. Mr. Pearson (fig. 37) wrote on Apricots in glass sheds, giving an impetus to glazed projecting copings for walls. He also wrote on orchard houses, advising those plain, light and well ventilated, as opposed to houses of indifferent material and bad construction. Vines, always considered the queen of fruits and most exacting of the gardener's skill to have perfect in colour and finish, was another of his subjects. Though one of the advanced in science his efforts were ever directed to utility—to training trees in the most useful forms, while scrupulously retaining their symmetry and beauty; to originating varieties of fruits distinct from and better in some way than those existing; to improving methods of cultivation, and having great regard for stable or farmyard manure, especially as a mulch for fruit trees. In very clear style he descanted on orchards, had a strong partiality to a grassy bed for standard trees, and pointed out that grazing, not hay culture, was the proper method. Furthermore, he advocated a dressing of animal manure, which he considered lost little or nothing by exposure on the earth's surface, and provided what all fruit trees needed—namely, a steady supply of food derived, as in Nature, from organic sources. Not that he was averse to artificial manures as supplementary to stable or farmyard manure, for he was strong in science, though stronger in practice.

THE REV. C. P. PEACH.

The spiritual and temporal guide of the inhabitants of Appleton-le-Street was a light in pomology and general horticulture, and shone brilliantly, and, better, usefully in the pages of the *Journal of Horticulture* by his writings. He chiefly wrote on fruit culture.



FIG. 36.—MR. DONALD BEATON.

His instructions with illustrations on grafting Apples and Pears are very interesting, and withal profitable. Experience with different varieties of fruits, their doings under varied circumstances, and the influences of stocks, soils, manures, and modes of pruning, were items entering into his treasured articles. On Roses, needless to say, he was great; indeed, no member of the vegetable world was too small or any too large for his great mind, provided there was utility in it.

* We are well aware of its being introduced into England by William III. but Rivers made it a plantation method.

HENRY BAILEY.

Who has not heard of and tasted Bailey's Melons? Few may remember his short pithy articles as "H. B." on the "Orchards of Kent" in *The Cottage Gardener*, but some will never forget his lucid contributions to the *Journal of Horticulture* on "Fruit Tree Pruning" when gardener at Nuneham Park. We say lucid with emphasis, for the illustrations clearly conveyed the directions a multitude of words never do. Fewer and more to the purpose were



FIG. 37.—MR. J. ROYSTON PEARSON.

never employed by any horticultural writer than by Mr. Bailey. True, his contributions were not numerous, but so far as they went they excelled in pithiness and clearness.

THOMAS WEAVER.

As gardener to the Warden of Winchester College, Mr. Weaver may not have been, as measured by extent of charge, a great man, but he certainly was a good practitioner, otherwise he could not have given satisfaction to his employer or employers for a lifetime, or contributed articles during many years. He had the rare faculty of brevity, using short pregnant sentences, ever to the point, and indicating hard-headed principles guided by horny-handed practice. His instructions for the kitchen garden bore the stamp of the "man of mark," working hard on well defined lines. They still abide as landmarks of what must be done in the vegetable garden day by day, week by week, and month by month, in order to maintain a constant supply of vegetables and salads throughout the year.

JOHN ROBSON.

What? A kitchen gardener! Yes, verily, Mr. Robson began his gardening career as kitchen server. Hence he entered upon his writing life fortified with the hand and head work essential to keeping all things smooth in the kitchen, while making everything pleasant and satisfactory in the dining room. In the kitchen garden the kid-gloved hands do not shine in work, except on necessarily tender-handed amateurs, and they, as a rule, write best that have done most by hand and head. Mark, "most" means greatest or highest degree—the gardener using every available means to render his charge attractive and satisfactory. The cottager's garden, an allotment, or any small space of ground, has as much claim to *not* as the garden or field measuring acres, for the union of labour with intelligence can be shown as well upon a small as upon a large scale.

But John Robson excelled in fruit gardening as well. Great as he was in the kitchen or fruit garden, he was greater in the pleasure grounds, and amongst broad and narrow leaved trees, flowering and leafy shrubs, plants of many kinds, and every species or variety in its proper place. An arboriculturist of the first order, pleasure ground director of the front rank, and flower gardener of the foremost, Robson's "hobby horse" was plans of flower gardens, how to prepare the beds, what to plant, the way to manage, and make a place beautiful at all seasons.

JOHN WILLS.

Decorative art was natural to Mr. Wills. Flower gardening in private establishments could not contain him, or hybridisation or increasing and improving plants and flowers by cross-fertilisation satisfy his ambition; hence he strove for and secured "fresh fields and pastures new." The great metropolis of the world alone did not

afford scope for his operations, but he must needs initiate and control one of the greatest businesses the world has yet seen in decorative art. The flower girl, the plantsman and florist, the wreath maker and bouquetière, the horticultural builder and light goods transporter—every lover of flowers, all those who delighted in adorning their houses with plants and flowers, everyone seeking to solace the sick and pay tributes to the departed, have reason to respect the master of the art of floral decoration—John Wills. He wrote fluently, and ennobled the craft by his efforts to adorn mankind and homes in garniture superior to that of "Solomon in all his glory."

THE REV. W. F. RADCLIFFE.

The Rector of Rushton was famous for the cultivation of the queen of flowers—the Rose—loved it in the garden, against the walls of English homes, and in the greenhouse. Its perfume was to him the nectar of the gods; its form and its tints of colour the rainbow of enduring love. He wrote, as only the educated can, so that all willing ears understood and profited. At Okeford Fitzpaine he directed his attention to fruits, especially Peaches and Nectarines on low walls. In the articles on these and kindred subjects the gardener appeared very conspicuously, his hobbies, like Mr. Beaton's, being to give plain directions to beginners, useful help and sound advice.

THE REV. A. HEADLEY.

The Rector of Hardenhuish was a self-taught rosarian, who had no teacher but the *Journal*, and the God-given love of Nature. His writings, ever overflowing in humanity, endeared all hearts to him, and, knowing this, longed for weekly intercourse with kindred spirits, and found no difficulty, through "Our Journal," in securing it. To say that his writings adorned these pages is not enough—he worked to increase and improve the produce of the land in beauties inculcated by the undying love of Nature.

ROBERT FISH.

At Putteridge Bury, Mr. Fish was famous in flower gardening—nay, in every department. "Very particular" was his predominant characteristic—as to soil, handling and smelling to ascertain texture and sweetness. Yes, he was "very particular." In writing more than that, for was he not always exact? "Hobbies," he had none, all requirements of the cottage, the villa, the mansion, for plants, flowers, fruits, and vegetables were one to him. If the dwellers wanted those things they must have them from their gardens. What he did in this direction was a delight to him to impart to others. To help anyone in difficulties was a duty—gardening must succeed. What he performed in work of this nature may be found in the files of the *Cottage Gardener and Journal of Horticulture*. No one laboured more, few so well, and none better to make all men gardeners. This great Scottish gardener ranks as one of the most useful writers on British gardening, and no name amongst gardeners in the United Kingdom stands before his as an all-round gardener.

WILLIAM KEANE.

This name appeared continuously for many years, and Mr. Keane's style differs from that of all other writers, but somewhat resembled Mr. Weaver's in shortness of sentences, and in placing a great deal in little space. Unlike that very practical gardener, however, he could enlarge on almost any subject, but he seldom did more than the calendar. "Work for the Week," so far as it was written by him, evidences sound knowledge on the several departments of gardening, his directions being explicit and calculated to meet the requirements of all classes of gardeners.

Many other names of horticultural writers in the *Cottage Gardener and Journal of Horticulture* occur to us, and also those that have enriched the pages on allied subjects, such as Mr. H. W. Newman on natural history, Prof. Westwood on insect pests, the Rev. M. J. Berkeley on diseases caused by fungi and other micro-organisms, and Mr. H. Honeyman on chemistry, with the Rev. W. W. Wingfield on poultry, Mr. J. H. Payne on apiculture, and Mr. J. Blundell in the "Home Farmer." The line of exclusion must be drawn, and in doing that we refer all interested to our files, wherein will be found *men of mark* not less noteworthy in some respects than those of whom we have endeavoured to give some account, and of whose works there can be no question as regards utility. This is the measure by which all men abide in history, and thus they do in the annals of the *Journal of Horticulture*.

THE VETERANS' PORTRAIT GALLERY.

From those whose voices are hushed in death we must turn to writers who are a host in themselves at the present day. Portraits of these have been distributed throughout the succeeding pages, each being accompanied by an article on some congenial subject. It is to such men that readers of the *Journal of Horticulture* have looked for

interest and, be it understood, for instruction, and not in vain. Their facile pens and well trained minds have ever been at the service of our readers, and it is as a small tribute of respect that their portraits are reproduced. Several of them will be personally unknown to the majority of the *clientèle* of "our Journal," and this may be given as justification, if such be needed, for the introduction of "The Veterans' Portrait Gallery."

We may briefly look at their record in connection with the *Journal of Horticulture*. Priority must be accorded to Mr. Robert Fenn, whose pseudonym of "Upwards and Onwards" was sufficient guarantee for sound common sense. Then the Rev. H. Honeywood D'Ombraïn, as "D., Deal," has been known for forty years as the king of florists, and his articles are always read with the keenest interest by everyone. From the remainder included within this academy of horticulturists, it would be invidious to give one precedence, as each has contributed for periods ranging from thirty to thirty-five years. The Rev. C. H. Bulmer, as "Herefordshire Incumbent," has done yeoman's service in the Rose world, both in and out of these pages, as also have Mr. Wm. Paul and the Rev. Alan Cheales. As a writer on cultural topics, embracing all phases of gardening, Mr. Edward Luckhurst will be well known to this and the last generation. Than Mr. N. H. Pownall none has written more entertainingly and withal instructively, but he has largely cloaked his personality by the *nom de plume* of "An Old Provincial." Of insects that are friendly and unfriendly to gardeners, "Entomologist" has related in pleasant style; such was the cognomen of Mr. J. R. S. Clifford, who also told of the garden lore of London and its environs as "J. R. S. C." As a demonstrator of the practical culture of flowers, fruits, and vegetables, Mr. Jas. Douglas has made his name widely known and universally respected. Is it necessary to refer to the works of Mr. George Abbey? Assuredly not! They are

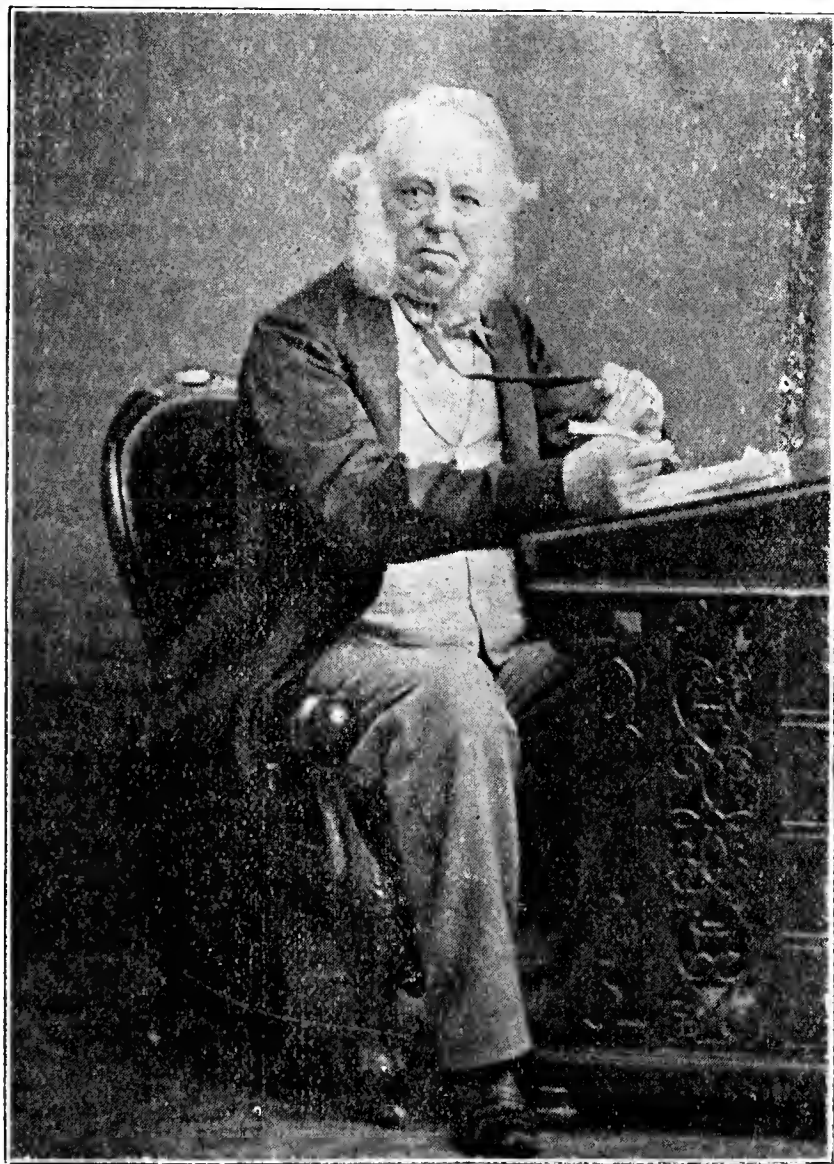


FIG. 38.—MR. THOS. RIVERS.

now and will ever remain tributes to the man whose pride lies in work well done, whether he were treating of insect pests, fungoid diseases, or the growth of plant life.

There are others in addition to those named who have laboured in the field of gardening as represented by the *Cottage Gardener and Journal of Horticulture*, but facilities do not enable us to give them deserved publicity. Younger writers have done their duty, and they, when the century of "Our Journal" is come, will occupy no less exalted positions, in their respective spheres, gained by services rendered "For Gardening and Gardeners."



RECENT WEATHER IN LONDON.—Wintry conditions, so far as cold winds and sharp night frosts are concerned, continue to prevail. Each morning brings fog and frost, followed by brilliant sunshine later in the day. On Saturday there was a slight hailstorm, with a cold shower later in the day. At the time of going to press on Wednesday it was bright and warm.

WEATHER IN THE NORTH.—February closed with two days of moderate frost in the earlier parts, thaw setting in later on the 28th ult. March has so far been marked by high winds from the west and north. On Sunday morning 2 inches of snow covered the ground, and it continued to fall heavily till midday, when rain set in. By Monday morning the snow had almost disappeared from the low grounds, that day being very wet in the former part, with a dry and cold afternoon.—B. D., S. *Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, March 14th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture will be given at 3 o'clock on "The Duke of Bedford's Experiments at Woburn: their Object and Method," by Mr. Spencer Pickering.

ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held at The Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 15th inst., at 7.30 P.M., the following papers will be read:—"The Prolonged Deficiency of Rain in 1897 and 1898," by F. J. Brodie, F.R.Met.Soc.; and "The Climate of Jersey," by the Rev. H. W. Yorke, M.A.

SEAKALE PLANTING.—The thong-like roots cut away from the large clumps when lifting them to prepare for forcing make the best material to increase stock. Cut them into lengths of 6 inches, the upper surface of roots transversely and the lower end slantingly. They should be laid in sand for a time, when it will be found that a ring of growth is formed from which the future shoots originate. These appear so thickly that it is necessary to reduce them in number when they appear above the soil. Place them in rows 2 feet apart, and a foot distance in the rows.—E. D. S.

NAPOLEON'S PALM TREE AT ST. HELENA.—The St. Helena Palm, which was valued so highly by Napoleon I., has been dead for some time. The Emperor often sat in its shade, dreaming of his glorious past. It was Louis Philippe's wish to have this historical tree transferred to the botanical garden at Paris, but the project was never carried out. Now the proud Palm is sold for firewood. With it, says a contemporary, disappears from St. Helena the last remembrance of the Emperor. The house in which he lived is fast crumbling away, and no one thinks of repairing it. The bedroom is used for a pig pen.

NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).—On Thursday a successful meeting was held, the new President (Mr. W. Histed) occupying the chair. The medals and certificates won by members during the past season were distributed. Afterwards the President in a few graceful words asked Mr. R. Pinnington of Roby to accept of a solid silver cigarette case with suitable inscription, as a token of the esteem and friendship entertained for him by all members of the branch. Mr. Pinnington spoke of his connection with the branch, and also the satisfaction it gave him to help them in any way. There were some charming exhibits from Messrs. McGregor, Turner, Drake and Cangle.

ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday Dr. J. Groves presided over a good attendance of members from all parts of the Island, who were present to hear a paper read on the "Cultivation of Peaches and Nectarines," by Mr. W. Tribbick, Brooke House Gardens, I.W. The exhibits staged were of first-class quality, and consisted of Cyclamens from Mr. A. J. Cole, Broadlands, Sandown, and flowering and foliage plants from Mr. A. E. Cave, Newport. The Association certificate for cultural merit was awarded to each of the exhibits. Several new members were elected. The exhibition of spring flowers will take place at Ventnor on April 1st.—S. H.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1899.										
February and March.										
Sunday .. 26	N. E.	deg. 30.0	deg. 30.0	deg. 43.1	deg. 26.2	ins. —	deg. 37.2	deg. 41.6	deg. 45.1	deg. 15.5
Monday .. 27	N. E.	24.8	24.8	29.5	23.3	—	36.3	41.0	44.9	16.5
Tuesday 28	W. S. W.	24.8	24.8	47.9	20.5	—	35.5	40.5	44.8	13.5
Wed'sday 1	W. S. W.	37.8	33.5	54.8	24.6	—	35.5	39.9	44.5	15.3
Thursday 2	W. S. W.	36.5	33.3	48.9	26.5	—	35.5	39.7	44.2	16.5
Friday .. 3	N. W.	35.1	34.8	50.0	28.0	—	35.6	39.5	43.9	21.5
Saturday 4	W. S. W.	35.3	34.8	48.1	30.2	0.02	36.9	39.7	43.6	22.0
MEANS ..		33.9	32.4	39.7	25.3	Total 0.02	36.3	40.5	44.3	17.7

Every morning has been more or less foggy, followed later by bright sun. The temperature has been lower than in any previous week during the winter. On Saturday, March 4th, there was a slight hailstorm.

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingley, for February was 3.10 inches, being 0.70 inch above the average. The heaviest fall was 1.82 inch on the 8th. Rain fell on eleven days. The maximum temperature was 56° on the 10th; the minimum 25° on the 28th. Mean maximum, 46.18°; mean minimum, 35.23°. Mean temperature, 40.70°, which is 3.85° above the average. Since the 15th we have had no rain, but have enjoyed thirteen days in succession of bright sunshine, with slight frosts at night.—R. I.

— **FEBRUARY WEATHER AT BELVOIR CASTLE.**—The prevailing direction of the wind was S. on twenty-one days. The total rainfall was 1.19 inch, which fell on twelve days, and is 0.62 inch below the average for the month. The greatest daily fall was 0.31 inch on the 15th. Barometer (corrected and reduced) highest reading 30.637 inches on the 28th at 9 A.M.; lowest reading 28.826 inches on the 13th at 9 P.M. Thermometers: highest in the shade 62° on the 10th, lowest 23° on the 26th and 27th. Mean of daily maxima 47.07°, mean of daily minima 33.25°. Mean temperature of the month 40.16°; lowest on the grass 16° on the 28th, highest in the sun 110° on the 10th. Mean temperature of the earth at 3 feet deep 40.82°. Total sunshine 118 hours 20 min. There were four sunless days.—W. H. DIVERS.

— **PHYSIANTHUS ALBENS.**—Your remarks on the above plant at page 148 induce me to send you a pair of fruits taken from a plant growing outside and trained to a wall over a doorway, where it is always an object of interest, either in summer, when it is covered with its creamy white flowers, or autumn and winter, with its peculiar fruits. Here the plant seems perfectly hardy, and regularly ripens its fruit, at least ripe enough for its seeds to grow, although I have never seen them of an orange colour. Our plant has thirty fruits on it this year.—W. PROSSER, *Moreton House, Dorset*. [The fruits were excellent, and we can quite understand the interest your plant creates.]

— **STRELITZIA REGINÆ.**—I see this plant was exhibited at the Drill Hall on the 14th of February, and it is the first time I remember seeing it mentioned in the *Journal of Horticulture*. It is a long time since it was introduced into this country; yet how very seldom it is seen in gardens, which is strange with such a beautiful plant. There is much about it to recommend; of a bold and almost majestic type, easily grown, not much subject to insect pests, its curious but beautiful orange and purple flowers standing out amongst its fine evergreen foliage, at once arrest and receive a large share of admiration. Eleven years ago we had a plant sent us, or more strictly speaking, a very small piece of a plant—only three leaves, and almost rootless. It was potted in turfy loam and sand, and now it occupies a tub about 2 feet across. The plant is 4½ feet high, over 6 feet in diameter, and last autumn threw up twenty spikes of flowers. It seems to enjoy a light sunshiny position, as our plant has stood close to the glass at the south end of a span-roofed intermediate house, and the hot-water pipes pass underneath the platform on which it is standing about 1 foot from its roots. In the South I have no doubt this plant will do equally as well at the warm end of a greenhouse. Ours is a cold northern locality.—N. N. [The flowers sent were of excellent quality, and for distinctive beauty could not be surpassed.]

— **GARDENING APPOINTMENT.**—Mr. W. Abbey, late gardener to E. Chatrian, Esq., Woodbrooke House, Birmingham, has been appointed gardener to A. Balwin Bantock, Esq., Merridale House, Wolverhampton.

— **NICOTIANA AFFINIS.**—Seeds of the Sweet-scented Tobacco should be sown in a pan or box, and the seedlings pricked out to strengthen in other receptacles before potting or planting out. It is an excellent plant to produce sweetness, especially in the evening, at which time its flowers open, and the odour from them is exceptionally strong. In the day the blooms hang limp and loose, and appear not to like the light at all.—E. S.

— **DEATH OF MR. JAMES HALL.**—Mr. James Hall, who for the past thirty-eight years has been employed on the estates of the Earl of Scarborough, for the first seventeen years as gardener at Sandbeck Park, Yorkshire, and since as steward on the Lumley estate, Co. Durham, died on February 24th in his seventieth year. He is succeeded in the management of the Lumley estate by Mr. T. Garnett, who has been gardener at St. John's, Wakefield, for the past twenty-five years.

— **BIRMINGHAM GARDENERS' ASSOCIATION.**—The members of this Society assembled in force at the fortnightly meeting, on the 27th ult., to listen to a lecture on "Fruit Growing," by Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby. The chair was taken by Professor W. Hillhouse, of Mason College. Mr. Goodacre, who is a well-known exhibitor of fruit and Chrysanthemums at the Birmingham shows, was accorded a hearty reception, and afterwards read a most exhaustive essay, which was highly appreciated, as it contained an immense amount of valuable information.

— **PROPAGATING MARGUERITES.**—White and yellow Marguerites may be readily propagated in a bottom heat of 65° to 70°. Select stout, healthy tops or side shoots about 3 inches long; remove the bottom leaves, and cut level close to a joint. Drain and fill 3-inch pots with a good mixture of sandy loam and leaf mould. Insert the cuttings round the edge. Four in each pot will suffice. Plunge the pots in cocoa-nut fibre refuse to the rim in a frame or box placed where the heat can produce the temperature named. When rooted, pot singly and grow without bottom heat.—S.

— **THE SILVER WATTLE.**—In the temperate house at Kew a plant of *Acacia dealbata*, 35 to 40 feet in height, is now very pretty, the head being smothered with flowers. For a large structure it is well adapted, as it can be taken up on a single stem until well above other plants, and then be allowed to branch freely, and so fill the top of the house without interfering with the dwarfier plants below. The fluffy globose heads—produced in large branching racemes—of bright golden flowers are well known to everyone as the "Mimosa," sold in such large quantities in florists' shops and about the streets. Besides being so pretty when in flower, it is worth growing as a foliage plant, the leaves being silvery and glaucous. It is a good natured plant, requiring little attention when planted out. It should be cut hard back every second year.—D. K.

— **THE TAXATION OF GARDENERS.**—There is a phase of this subject that seems so far not to have received the attention which it deserves, and that is the effects of such taxing or fiscal burthen on the provision of employment. We have but to glance just now through the advertising columns of gardening publications to note what an immense number of gardeners, young and old, are applying for places, showing how many must be in need of employment, and fail to find it. Is there any connection between the lack of labour in gardens, and the tax which a parental Government imposes upon a gardener's employment in private places? Of course, the assumption is that the employer pays, and as he is wealthy, how does labour suffer? But is the employer after all so wealthy? and in being called upon to pay a tax because he employs a gardener, is he not deterred, and seriously deterred, from keeping more than one or two perhaps, certainly as few as possible, because of the tax imposed upon gardeners in his constant employ? Stupid people, who cannot see an inch beyond their noses, reply, "Oh! if a gentleman cannot afford to pay the tax, why employ so many?" But those who look farther ahead realise that there can be no stronger reason urged for the abolition of the tax if it restricts labour, and that it does in gardens, and materially so, there can be no doubt. Practically this and some similar taxes are taxes or impositions on labour and employment, and it is because they are such every effort should be made to secure their removal. Were they so removed, who can doubt but that a great fillip would be given to employment in gardening, and that the entire community would benefit? Taxes we must have, but of all taxes, those which help to render employment difficult, whether in gardening or otherwise are the worst.—A. D.

SOUGHT AND FOUND.

WHO has felt what it is to lose an old and valued friend of forty-four years' standing—to wend his way for the last time around an old experimental garden, to linger alone through a gutted house, take a last long peep into every dismantled room, to hear the hollow boom of a closing door, and the grating sound of the key in the lock as it is turned to be taken away and handed over to the trustees? Twice I have survived the ordeal in regard to house and grounds, and I fear another flitting. However, the forces of life are irresistible; old associations must come to an end. But some of your readers may begin to think, What has that to do with water? Let me answer—everything for my theme, for without the above, that which is to follow would not have been written.

Those will sympathise with me who have experienced the difficulty in finding a house with a few acres of land attached prior to 1847, for the purpose of growing and experimenting with seedling Potatoes. I wanted a home in Berkshire near the town of Reading. I came to see the Cottage Farm, and recognised it would be a long uphill task to work it into shape; but where urgency drives, one cannot always choose. Altogether the place looked a sort of no-man's-land, with hedges broken down, and the forlorn little pond on which the house depended for its supply of water was filled by a recent storm with liquid the colour of coffee, which had run through a farinyard, and from thence by roadside rivulet for half a mile.

As soon as we had shaken ourselves into shape I investigated and found it would be essential to properly drain the land. John Tillen—"Drainer Tillen" he was locally called—seemed providentially to have been thrown in my way. He was nearly amphibious—never quite happy unless dabbling in the water meadows, had formerly assisted with the draining in Windsor Park, and in fact could do anything connected with water. He was upright as a ramrod. I inquired of him if he had been in the army. "Yes, he once served a month in the 'Royal Standbacks'" which I ultimately learnt meant the Berks Militia. I instructed him to form two tanks to catch the rain water from the roof. A few more days had passed, and then another confab. I said to "Drainer," "Look at that cow up to her knees in quagmire on the rising ground at the farther side of the meadow. I have roughly taken the level from thence at a tangent to this disreputable looking little pond, and without being a water diviner I feel almost certain there must be a spring there or thereabouts. Tell me, if you can foresee a difficulty in a drain being laid from where the cow is to this spot; it must be as near the surface as possible from here, and at the further end we can allow a depth of quite 6 feet." Tillen saw no difficulty, and after some labour and expense the operation was successfully carried out, and water fairly bubbled up at the depth of about 5 feet. We had tapped one of the springs of Berkshire—a boon indeed for this place, and I may say for my neighbours, for I say, "'Hoh!' come for water whenever you want it, but be sure and shut the gates after you."

It was all plain sailing afterwards, as I anticipated, and when completed the pure water entered a dip-tank holding over two hogs-heads. The "pond" was cleaned out. Bamboos and Kingcups were planted on its margin, goldfish are sporting in the water that seldom freezes, and has never failed us, summer or winter, since the spring was tapped.—R. FENN, *Cottage Farm, Sulhamstead.*

BOUVARDIAS.

ON looking over the plants which have been flowering during the autumn and winter, and which are at present in bloom, I can find none that have made a prettier picture than Bouvardias. Yet they are not grown in the majority of establishments nearly so largely as they ought to be, or as their merits entitle them to be, and many people who are often at a loss for small flowers in the midst of the Chrysanthemum season, quite overlook the fact that in the Bouvardia they have a plant that is of the greatest importance to them. Causes for this apparent neglect are not difficult to find, one being that cuttings have a happy knack of damping, but this may be remedied if proper precautions are taken, whilst another is the prevalence of insect pests, which if allowed to gain a hold will soon undo the work of a season.

Passing to the cultivation of the Bouvardia it may be stated that the plants can be raised from cuttings or division of the root, either of which will prove successful. The plants after flowering should for a time be kept on the dry side, and somewhat cooler, and then when introduced into heat will produce abundance of young shoots, these making the best of cuttings. When $2\frac{1}{2}$ or 3 inches in length take each shoot with a heel, and have ready some $3\frac{1}{2}$ or 4-inch pots half filled with fine crocks. Over these place a little rough leaf mould and fill nearly level with a light sandy compost. After the base of the cuttings have been carefully trimmed with a sharp knife insert them, and plunge in gentle bottom heat, being

cautious not to overwater, and just leaving a chink of air to dispose of superfluous moisture.

By this means there will be very few failures, and the plants will soon be ready for potting. A free open compost of leaf mould, a little loam and plenty of silver sand, will be found most suitable, placing the strongest plants in $3\frac{1}{2}$ -inch pots and others according to size. After potting place in gentle warmth, using water somewhat sparingly until the roots begin to work freely into the compost, when the syringe may be used to advantage with a view to keeping insects in check, as it is just at this time when the foundation is being laid that any inattention will soon cripple the plants.

When the pots are well filled with roots a compost may be prepared for the final potting, an excellent mixture consisting of three parts of turfy loam, one of good leaf mould, and sufficient silver sand

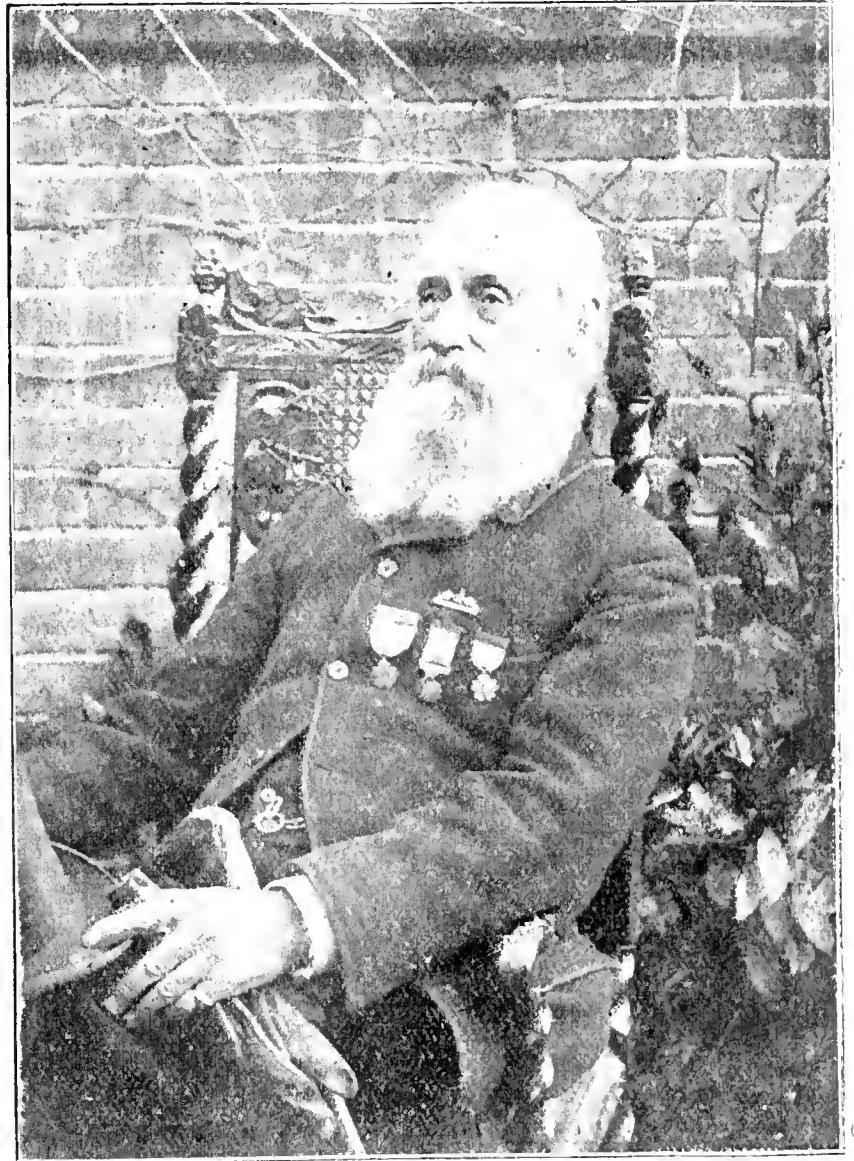


FIG. 39.—MR. R. FENN.

to keep all porous. I find 6-inch pots large enough for the first season, firm potting being quite essential if good, sturdy, short-jointed plants are to be secured. As the weather becomes warmer the plants may be removed to cooler quarters, a useful place being a cool frame, plunging the pots to their rims in ashes, which prevents rapid evaporation during the hot weather. As the pots become filled with roots weak liquid manure can be given twice a week with advantage, the lights of the frames being removed for a time, replacing during very wet weather.

In early autumn the plants must be removed to a house with gentle warmth, which may be gradually increased until a temperature of from 60° to 70° is reached. Abundance of bloom will be the result; in fact, every point will finish its truss of flower to perfection.

Division of the roots may be effected with a sharp knife, the after treatment being as advised for cuttings. If old plants are retained they furnish excellent material for cutting. The only care they require is to shake the roots out of the pots, reducing the soil, and repotting with a good compost into 8-inch pots. The following varieties are all excellent:—

Singles.—Boeki, deep coral, beautiful and free; elegans, large reddish scarlet; Humboldtii corymbiflora grandiflora, pure white, grand variety; Mrs. Robert Green, lovely salmon colour; Priory Beauty, perhaps the most charming of all, colour pale satin rose; President Cleveland, the finest of all scarlets; and White Bouquet, pure white sport from Vreelandi.

Doubles.—Alfred Neuner, white, excellent; flavescens, pale sulphur, vigorous; Hogarth, scarlet, fine; and President Garfield, pink, large truss, free.—R. PINNINGTON, *Roby, Liverpool.*

BEST POSITIONS FOR TOMATOES.

THERE are not any signs of decrease in the rage for Tomatoes; on the contrary, the evidence is all in favour of the presumption that this season they will be in greater demand than ever. Market growers utilise the whole of the body of their houses, planting transversely in well prepared borders. Some allow much more space than others, and after trying various distances, the conclusion arrived at is that an equal weight of superior fruit is obtained at a less outlay in labour and material by allowing ample space. I would advise owners in charge of small houses to crop differently, as they will secure heavier, earlier, and more saleable crops, if they utilise the roofs more and the body of the structures less.

Fresh soil is of the greatest assistance to the Tomato grower, and this is not often available in sufficient quantities to admit of a whole border being changed, but must be found when narrow beds along the fronts of houses only are provided for the plants to root in. In the case of houses with glazed fronts the ridges of soil may be formed on the floors, but the plants naturally make the best progress and produce the earliest crops when the soil is placed on slate-covered stagings over hot-water pipes, with, perhaps, a top-heat pipe just above the soil. A ridge 2 feet wide and 1 foot in depth of sound loamy soil is ample, but under and in front of this there may advantageously be 2 inches of ashes, made firm by having had pot plants on previously. Tomato roots revel in ashes, provided these are kept moist.

Most gardeners who have visited Mr. H. J. Jones of Lewisham during the summer will have observed that he can grow Tomatoes equally as well as Chrysanthemums. The bulk of the plants are trained up the roofs of small span-roofed houses, where they crop grandly. Mr. Jones is apt to draw attention to the small quantity of soil his plants are rooted in, but under pressure will admit that the ashes in front are crowded with roots, where they get the benefit of liquid manure from the soil, as well as occasional dressings of his own special mixture. It is only right to add that the varieties cultivated at Hither Green are among the heaviest croppers that can be named. The Cropper—an improved Ham Green Favourite—and the Champion, obtained by crossing the Cropper with selected Perfection—are both grand, and this I say after having had personal experience with them.

In many instances boxes or pots might well be substituted for a ridge of soil, and I prefer the first named when the position is much exposed to the sun or hot-water pipes, with no soil or ashes underneath for the roots to spread into. We frequently hear of the great weight of fruit produced by pot plants; but we cannot afford to be top-dressing, manuring, and watering all day long, and I invariably arrange my plants in pots, these running into thousands, where they can root out into either ashes or soil. No matter how well plants in 10-inch to 12-inch pots are attended to, there is always an improvement noticeable in their growth directly the roots reach the soil or ashes underneath. For roof culture the plants should be disposed 15 inches apart and confined to a single stem, nothing, as previously intimated, being gained, while much may be lost by crowding.

Shady positions do not suit Tomatoes, crops failing to set on plants that do not get a fair amount of light and sun. It is useless, therefore, to attempt their culture in well furnished vineries or Peach houses. For the first two, or three seasons at the most, after planting the Vines or trees it is possible to grow Tomatoes profitably in these positions, and if there is not any undue crowding of top growth, or neglect to keep the borders well moistened, no harm should result to the permanent crops from their association with Tomatoes. In these instances pot culture is desirable, standing the pots across the houses, midway between the rafters devoted to the growing Vines and in the spaces between and under the roof not occupied by Peach and Nectarine trees. I have also seen excellent crops taken from plants rooting in boxes disposed on the high back shelves of vineries and trained down the blank spaces between advancing Vines. Pots would not do in such positions, as they part with moisture too rapidly, whereas wood is non-conductive.

Amateurs who grow a few Tomatoes more or less successfully among their greenhouse plants will do well to remember that an ordinary herring box, costing one penny, will be much better for a single plant than a pot for which they have to pay fourpence. They ought also to avoid the varieties more noted for the size and handsome appearance of their fruit than for other good qualities. What they want in their small houses are sturdy growing, free setting, early ripening sorts, among which I would include Early Ruby and the comparatively new Comet. If they require a few handsome fruits for exhibition purposes a trial should be given Duke of York. I have noticed that many amateurs have small glazed sheds for potting and other purposes: the roofs of these should be covered with Tomato plants every summer, as they succeed fairly well in such positions.—W. LEGGOLDEN.

SPRING PLANTING.

DIFFERENCES of opinion undoubtedly exist regarding the respective advantages of autumn and spring planting for fruit trees. The advocates of each method advance their special reasons, and as these are generally founded on personal experience they are worthy of that attention and respect that should always be accorded to the observations of a practical man. Much can be urged in favour of autumn planting, and the most important of the arguments on that side relate to the expediency of the practice. Obviously, where there is a large

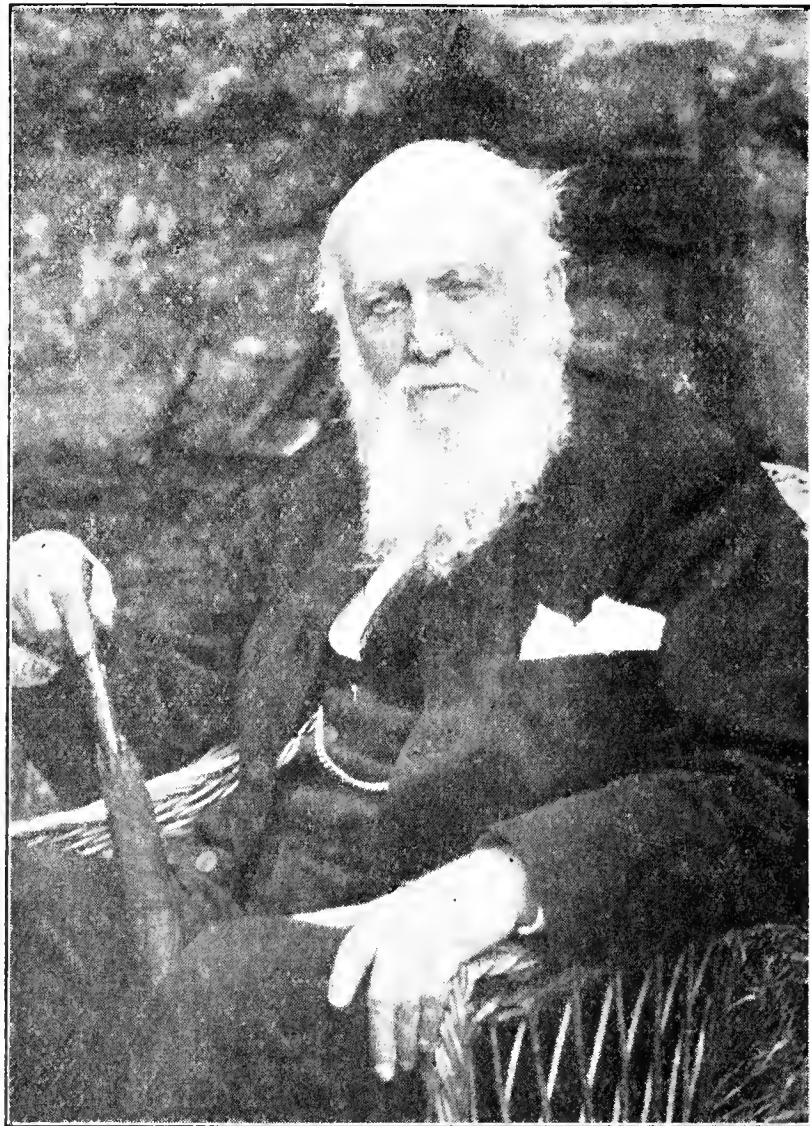


FIG. 40.—THE REV. H. HONYWOOD D'OMBRAIN.

extent of land to be planted, the earlier the work is commenced the better chance there is, in our uncertain climate, of having it completed in due time.

In reference to this, however, it may be said that where land has been properly prepared in advance the actual operation of planting need not be a very prolonged one, if an adequate amount of labour is available. Again, it is correctly said that planters who make their selections early in the season at the nurseries secure the best trees, and later purchasers have to be content with the leavings. There is something in this, perhaps, in certain cases, where the stock of particular varieties may be short, but as a matter of fact comparatively few growers do select their own trees, and the nurserymen very properly, in their own interests and those of subsequent customers, usually contrive to equalise their orders in a very fair way. There is another point in reference to this—namely, at whatever time planting is to be done, the selection can still be made in the autumn, and the trees will continue in as good condition for planting as if in the nursery quarters, provided they are carefully laid in trenches, the roots well covered with soil, in a position where rain cannot accumulate.

What may be termed the theoretical aspect of the question is briefly summed up as follows. It is contended that autumn planting allows a longer period for the trees to recover from the check and unavoidable injuries caused by removal. Further, that being in a state of rest they suffer less real damage at the time. There seems to be much reason in favour of these opinions, but are they supported by facts? Can any definite evidence be produced to prove that the results are precisely what they are expected to be? In my own experience I have had occasion to lift and examine trees planted at all times, and so far as appearance goes I have rarely been able to detect any improvement in the condition of the roots of autumn planted trees as compared with those removed at a much later period.

It is frequently said that the roots heal during a mild winter, and are ready to resume work in the spring. In some soils this is true, but in heavy cold land, and with the planting period followed by a wet winter, exactly the reverse occurs, and the damaged roots often decay. The time for healing wounded tissue is in the spring, when the vitality of the plant is re-awakening as it were, and it is then that damaged roots, stems, or branches, if cut clean with a knife, heal most rapidly and effectually. I am inclined to think that to obtain the advantages claimed for autumn planting in the respect mentioned, the removal should be done earlier than is the rule—viz., while the leaves are still on the trees, and when the weather and soil conditions have been right I have tried this with good results. Some judgment is needed, however, to avoid attempting it before the wood and buds are fully matured. I have proved beyond all question that the cuttings of Gooseberries and Currants inserted before the leaves have fallen, in a situation where they will not be dried, heal and form roots much more readily than if put in the ground at the orthodox time.

Having planted fruit trees at all periods, from the early autumn to the spring, partly as a matter of business, and partly from an experimental bias, I have satisfied myself that, under certain conditions, and with due care in the operation, planting can be as safely performed at the present time as in October or November, and sometimes with even better after results. The main point is to have the soil in good condition and to watch the trees closely in the event of an early start into growth being followed by a hot dry season, when a moisture-holding mulch over the roots, or the judicious supply of water, will prevent any serious results. It must be remarked in this connection that I always cut the trees back immediately after planting, and this reduces the danger of early growth being made before the trees can supply what is required from the roots. The lower buds are considerably longer in starting, thus giving the tree a better chance to recover.—L. CASTLE.

A REVERIE.

I SUPPOSE that no reader of the *Journal* will envy me the distinction of being one of the oldest contributors to these pages; such distinction as it is, Mr. Robert Fenn and I share it together. It is now near upon forty years since I became associated with it, and of what changes in men and things those years tell! My mind goes back to the old offices in Fleet Street, where Mr. Johnson and the Doctor used to sit enthroned. Then, what a long line of ghosts march past as one thinks on John Standish, Charles Turner, Donald Beaton (shrewdest and keenest of observers), and a host of others, whose facile pens used to fill its pages. And then, what changes of fashion in the things we had to do with. At one time one can remember how the Verbena, at another the Show Pelargonium, at another the Hollyhock, then the Fuchsia, the tuberous-rooted Begonia held their sway in our gardens, until they had reached such a degree of perfection that growers were contented with the package of seed, instead of the collection of named varieties.

Those years have seen also the introduction of new claimants, for what was the Japanese Chrysanthemum and the Gladiolus forty years ago? Those years have witnessed, too, the rise and fall of the bedding-out system of gardening, which at one time absorbed all the space, time, and energy of those who had charge of private gardens; and when they met, the talk used to be of how many thousands of "Geraniums," Verbenas, and Calceolarias they had put out for bedding. But here again time has wrought its changes, and the herbaceous border, with its more interesting occupants, now commands the attention of the gardener.

What developments of the future we may look forward to we cannot tell, but I hope and believe that when the pens drop from our hands, others more vigorous will take them up; and at any rate, it may be permitted for me to wish a long course of prosperity to the *Journal*, which I have humbly, but I trust faithfully, striven to uphold.—H. HONYWOOD D'OMBRAIN.

"FOR GARDENING AND GARDENERS."

THE use of mottoes is ancient, and, strictly speaking, should bear allusion to the achievement. This characterises that of the *Journal of Horticulture*, for "gardening" means work done in a garden, and "gardeners" imply the workers. A garden may be defined as a piece of land of any description or size, attached to or connected with a residence, and set apart, either for the cultivation of plants and flowers, or for the purpose of growing fruits and vegetables. The love of a garden and its products, in every way, betokens inborn notice and appreciation of the beauties and utilities of Nature. Flowers, and the plants specially grown to produce them, have a universal charm, presenting a means of endless study and enjoyment. Fruits and vegetables are of the greatest national importance, as representing a necessary source for supplying wholesome food.

The value of a garden cannot, therefore, be over-estimated, as it tends to promote health—the first wealth—and is also, by the very nature of its products, not merely conducive to the well-being, but essential to the existence of society. A garden, consequently, of some description, wherever practicable, in conjunction with every dwelling house, is one of the prevailing characteristics of civilised life, from the highest to the lowest class. The form and extent of the garden necessarily vary according to the amount of available space to be enclosed or the requirements and taste of those who have to incur the expense of preparing or maintaining it.

But of all departments of gardening the fruit and kitchen garden is most important on the score of utility, and requiring, whether small or large, the exercise of considerable skill, judgment, and forethought to attain to satisfaction in crops. The higher branches—such as the forcing of flowers, fruits, and vegetables, cultivation of Orchids and other plants under glass—are included in the term gardening—the art which enables mankind to make the most of Nature's gifts.

Gardening means not only to increase but to improve the produce of the land. Therefore every gardener—boy and girl, youth and maiden, man and woman—whosoever attains to this in greatest measure, not only derives most interest, pleasure, and profit, but does a real service to the country. All gardeners, amateur and professional, learn from Nature, from patiently tried experiments, from failure as well as from success, what is the best means of accomplishing



FIG. 41.—MR. GEO. ABBEY.

an object. No small advantage to them is that nearly all that can be known, and quite all that need be known, can be learned from carefully reading the information transmitted from the older to the younger branches of the craft, and handed onwards with the gradual but certain improvements of the age.

In this work the *Cottage Gardener and Journal of Horticulture* has borne a full share for half a century, and still exists, "as a giant refreshed," to maintain right to its motto, and achieve in the future, as in the past, everything desirable "for gardening and gardeners"—G. ABBEY.



COGITATIVE NOTES.

THE month of March is a busy time with the cultivator of Chrysanthemums, no matter whether it be in the production of exhibition blooms or a supply of flowers from the open border for the enthusiastic amateur. It is surprising what really good blooms many amateur cultivators produce. Enthusiasm coupled with a keen desire to pick up any useful hint is what goes a long way to achieve desired results. Any hint, then, that we can give for their benefit is time well spent. I do not mean, though, that the few remarks I shall make are intended only for amateurs. They are applicable to all interested in Chrysanthemums, whether as cultivators or on-lookers.

Cultivators make it a rule to insert many more cuttings than are required for final growth, and a wise plan too, especially now that so many collections are affected by the new disease—rust. I assume I am right in placing the word "new" to this disease which is agitating so many growers at the present time. The Chrysanthemum has been one of our most popular flowers for fifty years. It does seem strange that it is only during the past season that this enemy has taken so deep a hold of the mind of many persons. Neglect during the infantile stage of the disease brings disaster. If cultivators would keep a bottle of methylated spirit and a small camel-hair brush handy, and touch the rust spot with the spirit the moment it is visible, we should not hear nearly so much about the trouble.

Now is the time to decide on the selection of varieties and the number of plants of each to be grown. None but the best must be included. When I say the "best" I include those varieties that are difficult of production, as such weigh heavily with the judges in close competition. The inexperienced are liable to give way to personal sentiment in the selection of varieties. To illustrate my meaning, compare two varieties like Mrs. C. Harman Payne and the new Mrs. Barkley, both somewhat similar in colour, yet so distinct in point of quality. Again, take Madame Carnot and Souvenir de Petite Annie. The latter I have frequently heard praised by amateurs, and certainly it is a deserving variety for decorative use owing to its freedom in flowering and dwarf habit. Individually, too, the blooms are perfect, but not large enough for present day requirements in the exhibition arena. Madame Carnot I still regard as an ideal type of a Japanese Chrysanthemum.

Some cultivators I find adhere closely to such yellow varieties as W. H. Lincoln, simply because it is dwarf and easy to grow. The newer R. Hooper Pearson, for example, is infinitely superior for the show board. Where the former would perhaps gain three points the latter would probably secure five points. Such comparisons might be continued indefinitely, but sufficient has been said to afford the inexperienced ample food for cogitation on one of the most important details in connection with exhibiting. No two varieties that bear a close resemblance should be tolerated. All possible precaution ought to be taken to prevent disqualification. Another point in selection, and one that is worthy of the utmost consideration, is that of overcrowding the plants. Far better grow one hundred well than spoil double that number.

In many instances the bulk of the early-rooted plants are now ready for their first transfer to larger pots. It is a mistake to allow the roots to twine around the inside of the cutting pots. A stout foundation is essential to success. I know cultivators who have in the past striven hard to prevent a robust growth of stem, but who have never reached a high position in the prize list, and who are now seeking to grow the plants as strong as they can. I do not think it is possible to grow the plants too stout at the base, provided, of course, the growth afterwards is regularly and gradually matured, and not hardened by withholding water when it is perceived that the growth is gross and sappy.

A compost of two parts of fibrous loam to one of leaf mould and half-decayed horse manure, with a plentiful addition of sand if the loam be at all retentive in character, should be the means of laying a good basis for early growth. Should there be any doubt about the loam not being of a sufficiently rich character, add to every bushel of the compost 1 lb. of Thomson's Vine manure.

Much has been written in catalogues, and elsewhere, of the desirability of topping the plants in the incurved section. My opinion is if there were less interference with the natural growth we should see better examples than is now the case. No one who visits the exhibitions of to-day can fail to see the decrease in the quality of the exhibits as compared with five years since, or even less. What with the adoption of wrong methods of culture and the inclusion of varieties not belonging to the section, the Chinese incurved Chrysanthemum has fallen below its reputed standard of quality, and, I may say, of popularity also.

The preparation of the soil for future use must have attention. In many instances the necessity for the employment of chemical manures as a means of enriching the soil is absolute owing to various circumstances. For the final potting of the plants in May and June, no matter for what purpose they are grown, the present is not too early to prepare the compost. It is useless to mix this on the day required and then expect to get full benefit from the manures employed. For example, phosphatic manures (like bone, horn, and hoofs) require long periods for assimilation of their virtues by the soil before the plants can derive benefit. Basic slag is now largely utilised by cultivators, and this certainly should be mixed with the soil at the rate of 2 lbs. to one bushel of compost at least a couple of months prior to potting. Presuming, then, that freshly cut turf is to be employed the present is a good time to stack it in layers, sprinkling the basic slag between. Freshly gathered horse or cow manure may be substituted for the latter if the turf is from a sandy soil. When potting time comes the whole would be thoroughly incorporated.—E. MOLYNEUX.

HARDY FLOWERS.

GARDENING is an eclectic art, and has within its domain scope for workers of many tastes and many methods. Like all other arts it has its waves of fashion, when one class of flowers or one style of gardening is followed by the many who are less influenced by true love for gardens and flowers, while comparatively few cling to their old favourites. Now that the tide of popular favour is strongly in support of hardy flowers we may say that they are happy who, through good report and ill, cherished their herbaceous borders with the plants they contained. They have their reward now when these flowers are more appreciated than ever before. The old borders are coveted now with their treasures of old-established plants, which look so well compared with the small plants found in newer gardens.

One can hardly overrate the merits of the hardy flowers. They can be had in bloom, without the expense of glass houses and hot-water pipes, nearly all the year, save when bitterest frost or thick snow prevails. With the coming of the new year we may have the Snowdrop, the Crocus, the Christmas Rose, the Winter Aconite, the dwarf Iris, the golden Jasmine on the wall. The earliest are followed by the later Snowdrops and Crocuses, the Snowflakes, the early Saxifrages, and many more, among which appear the earliest Daffodils. These Narcissi, with those which follow, provide in themselves a long and precious procession of beauty which passes slowly—yet too quickly—before our delighted eyes, until May dissolves into June and summer has come with its luxuriant, lavish display. We cannot stay to tell of the gems which accompany the Daffodils. We think of the clustered bells of the Squills in their many forms, blue and white and pink, but we cannot read in their flowers the sad refrain of "Ai Ai" with which legend has marked them. Our thoughts of their loveliness are too happy for that. We think of the frail Windflower, with its sister, with scarlet or with purple cup, which we call the Crown Anemone. We think of sheets of snowy Arabis; of purple Aubrietia; of golden Madwort, with many others whose names are imprinted deep in the hearts of those who love the flowers of spring. The Daffodil has a retinue worthy of her beauty.

As these fade the wealth of summer is with us. The Tulip cups are its heralds blowing loudly the trumpet call, the fanfare which tells of the approach of the Lily and the Rose; the Iris, the Larkspur, the Pyrethrum, the Sunflower, the Enothera, the feathered Spiræa, the Pansy, the Viola, the Marigold, the Aster, the Stock. One may well pause, nay, had better cease, in the attempt to tell of the hardy flowers of summer time. If not innumerable there are too many to name, without even venturing to faintly limn their beauty and their ways.

With golden autumn and the dying days of the year the hardy flowers come with richer and then with a sadder loveliness. There are golden Sunflowers, great Dahlias, exquisite Gladioli, flaming Kniphofias, with many other perennial flowers and the lovely annuals, some of which, because of their self-sowing habit, may as truly be called perennials as those which yearly from the mother root send up their leaves and flowers. Then come the Starworts, with their sober,

beautifully coloured flowers, the Meadow Saffrons, the autumnal Crocuses and Snowdrops, which complete the cycle of the year.

As we think of them we think, too, of their colours and hues; purest white passing from creamy white through light yellow to deep yellow and orange; palest flesh passing through pink to scarlets and crimsons of deepest dye; faintest tinge of blue ranging through the gamut of shades of colour to deep blue and black purple. We cannot tell of the shades, the tints, the markings which complete the glory of the flower. Leaves also give us their share of fascinating grace and interest. Greens and greys, silvers and glaucous blues, bright or deep red brown, are there with forms innumerable. Entire, arrow-shaped, lobed, pinnate, lance-shaped; smooth and rough, hairless or spiny, many are the peculiarities and beauties they show.

Nor are we less pleased with the habit of the plants or the form of their flowers. Towering aloft and stately some are, while there are all sizes until we reach the creeping plant, which scarcely rises above the soil. Bells and cups, quaint hoods, tube-like blooms, cup within cup, bell within bell, hood within hood, creamy plumes, sprays of foam-like bloom.

If we add to the thought of the charms of the hardy flowers that of the little care they ask at our hands; their perennial reappearance; their fitness for entwining themselves into our fondest memories; their innate beauties of form and colour are enhanced to our minds, and we prize them more and more as time rolls on.—S. ARNOTT.

FAULTS, FALLACIES, FAILURES.

Why is it that in the Midlands one so frequently hears the advice, Do not procure fruit trees from the South? This is a question to which I have never had a satisfactory answer, and I always press home the adviser for his reason. The invariable reply is that southern trees are "soft" and do not answer when sent north, and that trees from the north are so hardy that when sent south they are bound to thrive.

Now, there is nothing like the logic of facts to "floor a fallacy," and my bit of logic is the condition of the trees in the Derbyshire County Council fruit plots. The whole of the trees and bushes were procured from southern nurseries. Many of those planted in 1893 at Duffield are now pyramids, upwards of 12 feet in height; grand examples are they of healthy growth, symmetrical development, early and persistent cropping, exemplifying the beneficent influence of the broad-leaved Paradise Stock in affording robust growth in conjunction with the early development of plenty of blossom buds. Equally remarkable are the standards, all of them being in a satisfactory condition of development, some having heads 12 to 14 feet in diameter. Quite as satisfactory are the trees planted in 1895 in the fruit plot at Matlock Bridge. Fortunately, they are before the public, and tend, better than anything I can say, to refute the fallacy.

It is precisely this taking care of the trees that I had in my mind when I sat down to write this note. Can anything be more tantalising, or more unsatisfactory, than the condition of many a collection of young fruit trees during the first year or two after they have been procured from a nursery and planted in their permanent quarters? Many a time and oft have I been called in to advise the disconsolate owners of such trees. There stand the trees, alive, it is true, but only putting forth leaves; there is nothing like free growth upon any of them, and, yet, how well they looked at the nursery! There the growth was positively rampant. Why should mere transplantation induce so great a change? This is precisely the point. Let us look into it a bit. It is the nurseryman's business, as it tends to his profit, to have his young tree stock in perfect health and vigour—vigour, especially, he must have. He knows full well that to this end his soil must be abnormally rich in fertility; he makes it so, and keeps it, either by liberal dressings of natural or chemical manures, or both. In this matter his ideas of liberality are far and away beyond those of the ordinary practitioner. Gardeners are not bad hands at cramming the land with manure, but where the gardener uses 50 tons to the acre the nurseryman will use 100. The gardener, perforce of circumstances, often falls short of his fifty, but the nurseryman is bound to keep the land up to his standard, or his stock would deteriorate. Surely, the sight of the magnificent growth of nursery stock should make one thoughtful and cautious—but thoughtful, especially. An intelligent man would not only endeavour to grasp the reason why the trees had such clean, healthy, vigorous growth in the nursery, but also to see how he could induce the trees to grow with sufficient vigour for his purpose after he has them in his hands.

To take a very common case—that of the planter of little experience. Partial or total failure is often the result of his attempt to establish such trees in his garden. He has been advised that he should not use manure in preparing the soil for the trees. Acting on the advice which it may be he has seen over the name of a well-known fruit grower, he plants the trees with all due care, but

without manure, in soil which, if not absolutely poverty stricken, is low in fertility. Can it be matter for surprise that feeble growth is the result, or that the gardener is disheartened, his employer disgusted? Not a pleasant thing is it to be asked to advise in such a case. How much rather in the interest of both master and man—aye! and of the nurseryman too, would one prefer to be consulted beforehand!

It may be as well to remind beginners that abnormal fruit bud development is not always owing to poverty of soil. It is frequently a result of transplanting both in Pears on the Quince stock, and Apples on the Paradise. In the autumn of 1894 I had a young pyramid of Cox's Orange Pippin practically without a wood bud, but with a



FIG. 42.—MR. E. LUCKHURST.

profusion of blossom buds. The tree was then cut hard back behind the blossom buds; nothing was done to the roots, as I knew the soil was rich enough. The result was vigorous growth, and the tree is now a fine specimen.—EDWARD LUCKHURST.

—COVERING OUTSIDE VINE BORDERS.—There is a variable practice appertaining to Vine borders in the matter of winter protection, some believing in a heavy coat of manure, others of leaves, and some nothing at all. So long as mild weather occurs the latter course may not bring about any serious consequence; but deeply penetrating frosts undoubtedly are not beneficial to the fleshy and fibrous Vine roots situated near the surface. The residue, too, from decaying manure has a tendency to encourage and foster the increase of surface roots, which is so pleasing to the grower. I have noticed that unprotected borders present few surface roots, no matter how otherwise treated. A heavy coat of farm manure is not desirable, though of the two evils the latter is the less one. To my mind freshly gathered tree leaves form an ideal winter covering placed fairly thickly over the border surfaces, and these covered with sufficient strawy material to prevent their being disturbed or carried away by the wind. These become wet during the winter, and in this state are cold in spring, and houses started fairly early are benefited by having the covering removed during the prevalence of sunshine, and replaced again at night. During a winter's use decay will provide a fair amount of broken leaf, which, with the presence of surface roots, will tend very much to their increase; and if, when these are finally removed, a layer of horse or cow manure is spread on the border these roots will benefit the Vines materially.—R. A.

CHERRIES FOR GARDENS.

THESE delicious fruits are so much appreciated both for dessert and for preserving, that it is a matter of surprise that greater efforts are not made to grow them more largely in many gardens. They will not, of course, succeed everywhere, but undoubtedly there are numerous gardens in which they might be successfully grown in considerable quantities. This matter has forced itself upon my mind at various times when living in different parts of the country, as in every county in which I have sojourned I have always met with a few trees which were thriving satisfactorily, and I fully believe that if a suitable site is selected where the soil is a fairly deep loam resting on a sandstone or calcareous strata, Cherries may be well grown in all counties south of the Trent. In the noted orchards of Kent the soil is a good brown loam, resting on the Kentish rag, which insures ample drainage; and one of the most important points to observe in Cherry growing is to see that the drainage is thorough. In low-lying water-logged land they will not thrive, neither will they on land which has a clay subsoil, even though the position is undulating. For preference a site with a gentle slope to the south should be selected, but in some parts of Kent Cherries succeed splendidly on sites which slope sharply to the north.

Having now indicated the character of the soil and the situation to be preferred, *Journal* readers will, I think, agree with me that these favourable conditions may be met with in numerous gardens throughout the country, and I trust that many gardeners who have not yet made an attempt at Cherry growing will begin at once while there is yet time to plant this season.

An open situation should be selected, and if it is intended to plant small fruits between, standards worked on the Morello stock should be obtained, as those worked on the wild Cherry resent disturbances at the root. This fact probably accounts for the Kentish practice of growing Cherries almost exclusively in orchards. If the trees are planted 30 feet apart, ample of room is allowed for them to develop into fine specimens capable of bearing many bushels of fruit. In the majority of gardens, however, a large breadth cannot be devoted to Cherries. What is required are a few trees of several varieties which will give a succession of fruit. In such cases bushes meet the requirements in every way, and I prefer them to pyramids, because they may be kept in proper form without much pruning, and, moreover, prove extremely prolific. If bushes are planted on either side of a walk, 12 feet apart is a suitable distance, if in a separate quarter 15 feet.

If the whole of the ground is trenched, so much the better; but when this cannot be done, holes 5 feet in diameter ought to be taken out to a depth of 2 feet, the subsoil broken up, and the hole partially filled with some of the best soil at hand. As a matter of course the points and broken portions of roots should be removed, those remaining being spread out in layers and covered with soil, the uppermost layer being about 2 inches below the ground line. After the planting is completed, a mulching of rough manure or leaves will do much toward securing a good start by helping to keep the roots uniformly moist. Bush trees should be worked on the Mahaleb stock.

After planting, cut the shoots back to within 9 inches of their base and shorten the leaders again the following year, till the requisite number of branches is obtained; these leaders may then be allowed to extend from 9 inches to a foot each year till the desired height is obtained, and from that time be annually pruned to within one or two eyes of their base. Early in June the side shoots should be pinched to three leaves, and the leaders to ten or twelve. When this system is followed, very little autumn pruning is necessary; it only amounts to shortening back a few spurs here and there, or removing others as they become old and gnarled. This spur system of pinching and pruning is well adapted for such varieties as Early Rivers, Early Red Bigarreau, Frogmore Early, May Duke, Governor Wood, Late Duke, Waterloo, Black Eagle, and Coe's Late Carnation.

The several fine Bigarreau and Heart varieties do not succeed well when grown in the bush form if closely stopped and pruned, but they bear freely on young shoots of the previous year's growth in a similar way to Morellos. The best way to deal with varieties of this type is after the requisite number of branches (nine) are obtained to allow them to grow at will, simply thinning out the shoots freely each year after the crop has been gathered.

I have often been surprised to find Morellos are not more generally grown as bushes, for enormous crops may be obtained from them when grown in that form. The fruit is not quite so large as that produced by trees against walls, but if all items of culture were taken into account over a series of years, the bush form would, I think, be found the more profitable method of growing this popular sort.

I do not intend in this note to deal in detail with Cherry culture on walls, because nearly all gardens contain a few trees grown in that way, but I should like to draw special attention to a fine early variety,

which is not so much grown on walls as it should be; I refer to Black Tartarian. If fan-shaped trees are planted and kept in check by summer pinching superb fruits may be obtained, of which any exhibitor might well be glad setting up a collection of fruit at some great show. —H. DUNKIN.

THE WEATHER.

THE Americans say we have no weather in England, only samples of it; at any rate, it affords an endless matter of interest. We once belonged to the Continent, but I apprehend have got on



FIG. 43.—THE REV. ALAN CHEALES.

considerably better since the connecting link gave way, and the shallow 200 feet deep channel was hollowed out. It is something to escape such visitations as that New York has just had; even if an April day here can, and sometimes does, include samples of the four seasons in its twenty-four hours. The Gulf Stream, moreover, is something to be thankful for, though it occasionally sends us a long series of damp depressions. The Banks of Newfoundland are said to be the breeding place of half our weather. The Gulf Stream there meets the Arctic Stream, and something like endless fogs on the Banks is the consequence. "Fog, dog, and cod" are said to sum up Newfoundland. But uncertainty is the only certain thing about English weather. As some rude person has said,

"Coy as a woman, and fickle as she,
No one can tell what the weather will be."

At least, till it is past; and then we may moralise. Last year broke all records; its drought, its north winds, its hot September had all much unprecedented, especially here, the seven days above 80° during the month. For the last three years this portion of the Thames Valley has been like King Arthur's

"Island valley of Avilion,
Where falls no hail or sleet, nor any snow."

And the rainfall, though doing its best, has not yet recuperated. Our 1898 record was some 4° under the average, whilst the long lack of snow must have told heavily on the springs, which may be some time in recovering. At this point, however, I feel called to recognise Mr. Mawley's never failing annual reminder. Is it also a permission? "*De mortuis nil nisi bonum*:" "Do not abuse the year till it is passed."—ALAN CHEALES, *Reading*.

GARDEN INSECTS AS WEATHER PROPHETS.

Just at this important season, when winter is losing its grip of the land, and signs of spring are appearing, a sight rather familiar to us is that of a host of midges, or small gnats, disporting over some garden walk. I have also noticed them by thousands along a road, having evidently descended from sloping fields above, attracted by the sunshine. Of course there cannot be a fresh batch of these flies every time we see them, so that at intervals they must hide amongst grass or in shrubs. They do not seem to be vocal, like others of the tribe, so how the signal to assemble is given we cannot tell. Curious to note, the flies will execute now and then a double movement, rotating in the air regularly, while they are also moving as a body towards some direction. People sometimes hesitate to pass through a swarm of them, lest they should be stung, but I believe the insects are harmless, though stinging gnats may occur in parties near streams. What is specially interesting about them is that their dances are thought to betoken an improvement of the weather. I suspect their indications are deceptive, for I have known a wet morning to follow a turn-out of midges at dusk; this may be true, that when they appear on a rainy day, the sky will clear shortly.

Newspapers occasionally narrate the appearance of butterflies on the wing in January and February, the conclusion being drawn that they are signs of an early spring; but that does not follow. Brimstone and tortoiseshell butterflies hibernate in nooks and corners; a fine winter's day sometimes rouses them, and out they come, probably to fall victims to a hungry bird; they may also be dislodged by the clearing of a barn or the cutting up of a woodstack. Nor can the emergence of such moths as come forth at the beginning of the year, should it occur about the usual date, surprise the naturalist; it is their season, if to the ordinary person they appear unexpected objects. Those of the Hybernias that emerge between November and March do not vary much with the weather, yet in a sense such moths may be called prophets—one, indeed, common everywhere, bears the name of the Spring Usher. These are slim-bodied insects, with wingless females, some of which are too well known as parents of broods of caterpillars which strip the foliage.

Every gardener wishes to have a calm and genial spring, and many caterpillars might join him in the desire, and it is one consolation while keen east winds blow, that they are destroying hosts of his juvenile enemies who have quitted the eggshell rather soon. Spring rouses the hibernating caterpillars by degrees, some venture out early, others refuse to move if the warm days are few. Should a gardener see by the wayside on Chickweed or Nettle the shaggy caterpillar of the tiger, it is a hopeful sign, indicating that the season is making progress towards warmer nights. Again, should he detect upon Gooseberry or Currant the spotted caterpillar of the currant or magpie moth stretching itself after its long nap, he may conclude the insect is aware that the buds are just expanding, and it is a warning to look after those of the brotherhood.

Good old Moses Harris tells his readers that, from his experience, the flight of the small white butterfly early in the morning seldom fails to foretell a fine day. Spiders, too, are natural barometers; if heavy rains have damaged their webs during the night they bestir themselves the next morning should the sky be likely to clear, but when more rain is approaching they coil up under a leaf and wait for better days. On those dull days of May when an east wind blows yet the air is rather still, the migration of aphids in the winged form occurs. In some way unknown to us these tiny insects perceive the approach of the time when they may safely fly, and by watching we may see them preparing for the weather that country folks call a "blight."—J. R. S. CLIFFORD.

WHAT IS IT?

YES, what is it? There is something in the air—the sky is full of portents—great events are at hand, and we all are standing and watching with breathless expectancy.

What do we want? what do we desire? Life—new life in our veins—life which makes the old young again—life which makes the young intoxicated with joyous hope and passion. The new life breaks slowly at first, we are not quite sure if the awakening has begun in earnest; there is a stir, a gentle rustle among the dry leaves, and then all subsides into winter stillness again. But the movements are oftener repeated, the rustlings are not so subdued, and a harbinger of life appears here, there—just forerunners of the great revival.

The purling stream, with its gentle murmur, wakes the first note, to be quickly taken up by the starling and the blackbird, two such busy individuals, careering over the lawn intent on worms, big or little. Indeed, no worm seems too big, and a tussle between the bird and its most unwilling victim, is one of the pleasant sights I witness from my window.

The voice of the dry searching wind forms an orchestra of its own;

E. by N.E. it comes tingling and smarting, fairly beating us into action. "No time for loitering now," the wind says: "I have dried the damp soil and made the highways smooth and clean. Oh, son of man, I have done my part, now do yours. Give old Mother Earth her wonted tribute of seed, and plant and leave her to nourish and bring up children." The days of winter idleness are over, the days of healthful outdoor work begin, and he is but a laggard who folds his hands and will not face the sharp sting of the morning air.

The flower beds appear eruptive; the upper crust of the earth is broken, and a night's rain and a day's sun serve to discover little bayonet points of green. We shall have a quick succession now. Fresh and tender green, the harbingers of our precious floral gems.

Our winter flower, the saucy Aconite, is over; the Fair Maid of February treads quickly on his heels, only to be followed by the clusters of Crocus, gold and imperial purple, which in their turn yield the sceptre to the myriad hosts of Daffodil and Narcissi, and who dispute with Hyacinth and Tulip place and homage. We are wondering what damage King Winter may have done to our Queen; it is too early yet to arrive at a just estimate, but all signs are hopeful. The late and warm autumn proved a grand ripener of wood, and the bark looks healthy and vigorous. Do not be led, my friend, into the error of too early pruning, the frost King may yet have surprises for us, and ours is but a treacherous clime.

The early Violets have been for some time in bloom under the shelter of the old wall; we shall soon be searching bank and dell. Do you know where the first Primrose is found? Ah, yes, the secret is mine. You shall have a share of my spoil, but you shall not know my happy hunting-ground. Nature reveals her secrets to her lovers; she is no coy shy beauty, but she wants no half-hearted admirers—all the heart or none, she cries.

It were folly to say the trees and hedgerows are as dead; see how



FIG. 44.—MR. J. R. S. CLIFFORD.

all the leaf buds swell and shine, and in the Pine woods is incense worthy the dwelling of the Most High. The natural world is brimful of delights; there is no corner too mean, no plant too humble to be left out in this great regeneration. There is the Fern-like Corydalis at the window, the springing roots all around every inch of the dear garden bearing its own peculiar treasure, the accumulation of over twenty years, each with its own history, each with its memory of glad days or sorrowful days, and they all are passing into the hands of strangers. The last good-bye is said, and the happy country life is exchanged (oh, sorry exchange) for a life of mere existence in the murky town.—THE MISSUS.

BLENHEIM.

To all horticulturists the name of Blenheim will be familiar as referring to one of the most celebrated estates in the country; while to students of history it recalls the glorious victory that was gained by British arms under the first Duke of Marlborough at the battle of Blenheim. The demesne is so crowded with historical interest that a few notes must be given on this aspect, relative to which we cannot do better than let Mr. John E. Jefferies of Oxford speak, for no one in the horticultural world is better qualified for the task.

“It may be said of Blenheim that its stately grandeur is of universal fame. The historical associations that are remembered therewith, as well as its impressive appearance from various points of view, invest it with an interest and charm that in a measure correspond with its fame; indeed, it is a place of permanent interest to visitors from far and wide. The park, 2700 acres in extent, with a circuit of about twelve miles, and the palace covering three acres of ground, represent a nation's reward to John, Duke of Marlborough, in the reign of Queen Anne, for victories gained during the wars of the earlier part of the eighteenth century. The Parliament of the day voted a grant of half

On entering the park from this point, a view of the palace is obtained with a part of the lake, 250 acres in extent, that until recently contained a vast accumulation of aquatic weeds, which seemed as though they would become a permanent disfigurement. To eradicate them was a work of great magnitude. However, it was laudably undertaken by the present Duke of Marlborough, who should be congratulated on the great improvement that has been effected in satisfactorily accomplishing a work that so manifestly enhances the grandeur of this historic domain. Now the lake is a charming feature in a most pleasing landscape as viewed from the broad carriage drive at an elevation of more than 100 feet above its surface, with the distant massive stone bridge and the extensive woods that reach far beyond, completing the beauty of the picturesque scenery. The water is supplied by the river Glyme, which, after flowing through the estate, joins the Evenlode, and is finally discharged into the Thames a few miles distant. The genius of “Capability” Brown transformed what was here a mere rivulet into an extensive lake, and its formation may be regarded as one of the chief accomplishments with which his name is associated. The cascade at the lower end of the lake forms an appropriate addition, and is a good example of this description of construction, and does much to heighten the effect of the surroundings.”

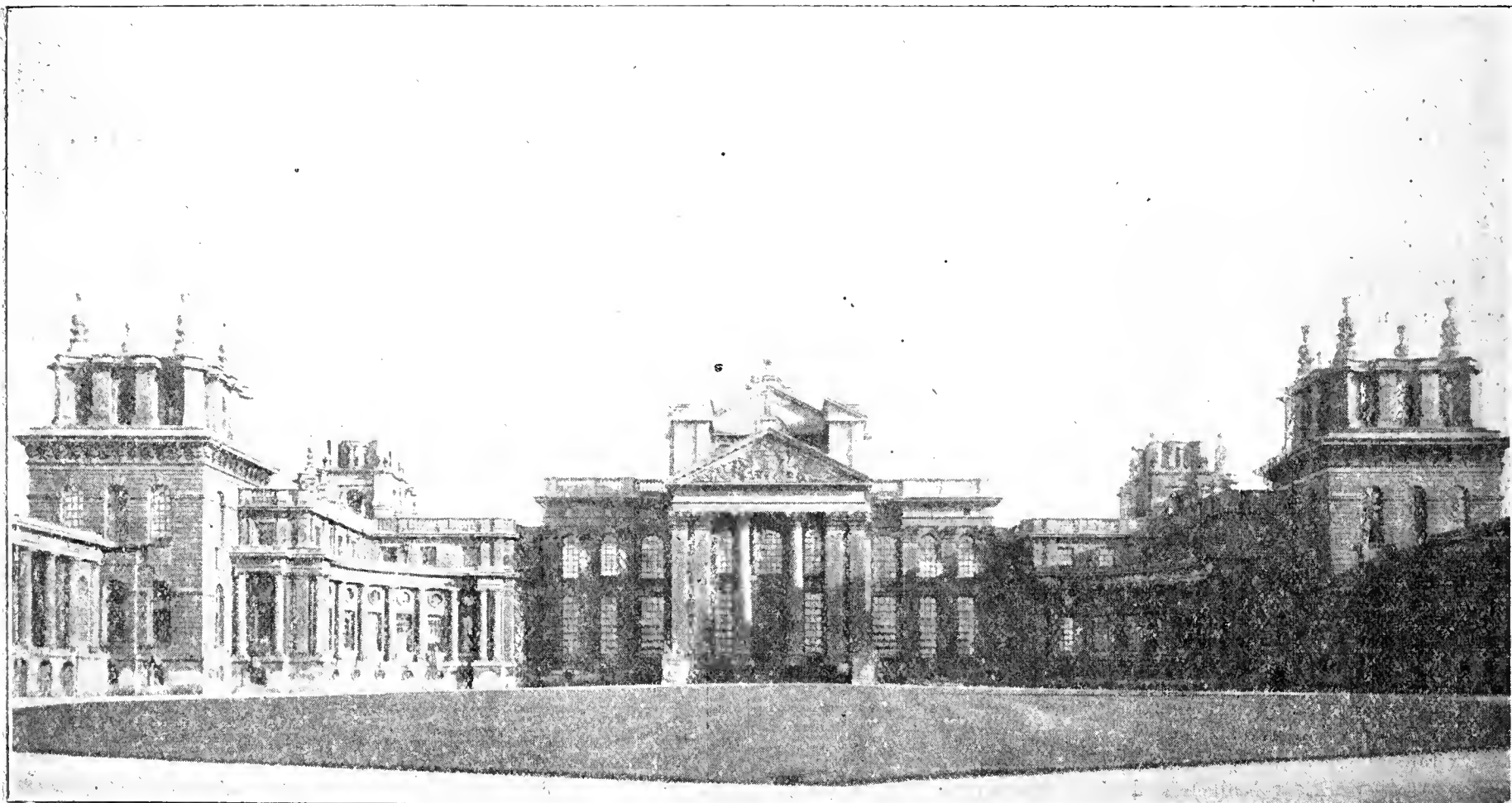


FIG. 45.—BLENHEIM PALACE, NORTH FRONT.

a million of money for this purpose, and the erection of the palace was commenced in 1705 from designs prepared by Sir John Vanbrugh, but the Duke died in 1722 without having resided in the mansion.

“The domain is distant from Oxford eight miles and is contiguous to the town of Woodstock, a favourite forest retreat of the Saxon kings in the ninth century, where, in 866, it is recorded, Ethelred, brother of Alfred the Great, built a palace in the park that became the birthplace and residence of future monarchs. It was here that, it is said, King Alfred translated a classic of Boethius, ‘De Consolatione Philosophiæ,’ an edition of which, edited from the MSS, is just issued from the Clarendon Press, Oxford. The ancient palace, although sought to be preserved by Vanbrugh, was demolished by command of the Duchess in 1709. It was situated a short distance from Rosamond's Well, which is still a never failing spring, and is to be seen surrounded with masonry surmounted with an iron railing. Rosamond's residence was outside the park wall, and is supposed to have been approached by a tunnel; it was ordered to be restored by Edward III., who, for a few years after his marriage, resided principally at Woodstock.

“Blenheim Palace is approached from various directions, the two principal entrances being from the town. That used by the public is through the triumphal arch, which is of the Corinthian order of architecture, erected by order of Sarah Duchess of Marlborough, in 1723.

Such is an outline of historical Blenheim. Pages might have been written with the greatest ease, but Mr. Jefferies, having sifted the grain, gives no chaff, and so we may now, except for one point, leave it and turn to other features. In his concluding paragraph our contributor adverts to the Glyme as a rivulet converted into a lake. There has always been some question as to whether there was not always a lake between the mound on which stood the ancient Manor of Woodstock and the rising ground that is surmounted by the palace. After closely examining an old print of the park as it was said to be in about 1700, one is convinced that Mr. Jefferies is correct in his assumption, as the course of the Glyme can be readily traced as it winds through the meadow. The palace itself stands magnificently, and considering the area of ground covered, it is needless to say that it is imposing, though perhaps somewhat too dwarf and flat to be really grand.

Pass we now to the care of Mr. Thos. Whillans, who has been located for a dozen years, and whose charge, which reaches a total of about 133 acres, includes pleasure grounds, flower and vegetable gardens, with numerous glass structures. From the palace to the gardens one must traverse hill and vale for about a mile, but that distance is likely to be indefinitely extended to the visitor whose tastes are either horticultural or aboriginal. From the latter aspect both the greater and the lesser parks are peculiarly rich, though not so much in variety as in the excellence of the species that thrive. Oaks, for example, are seen in

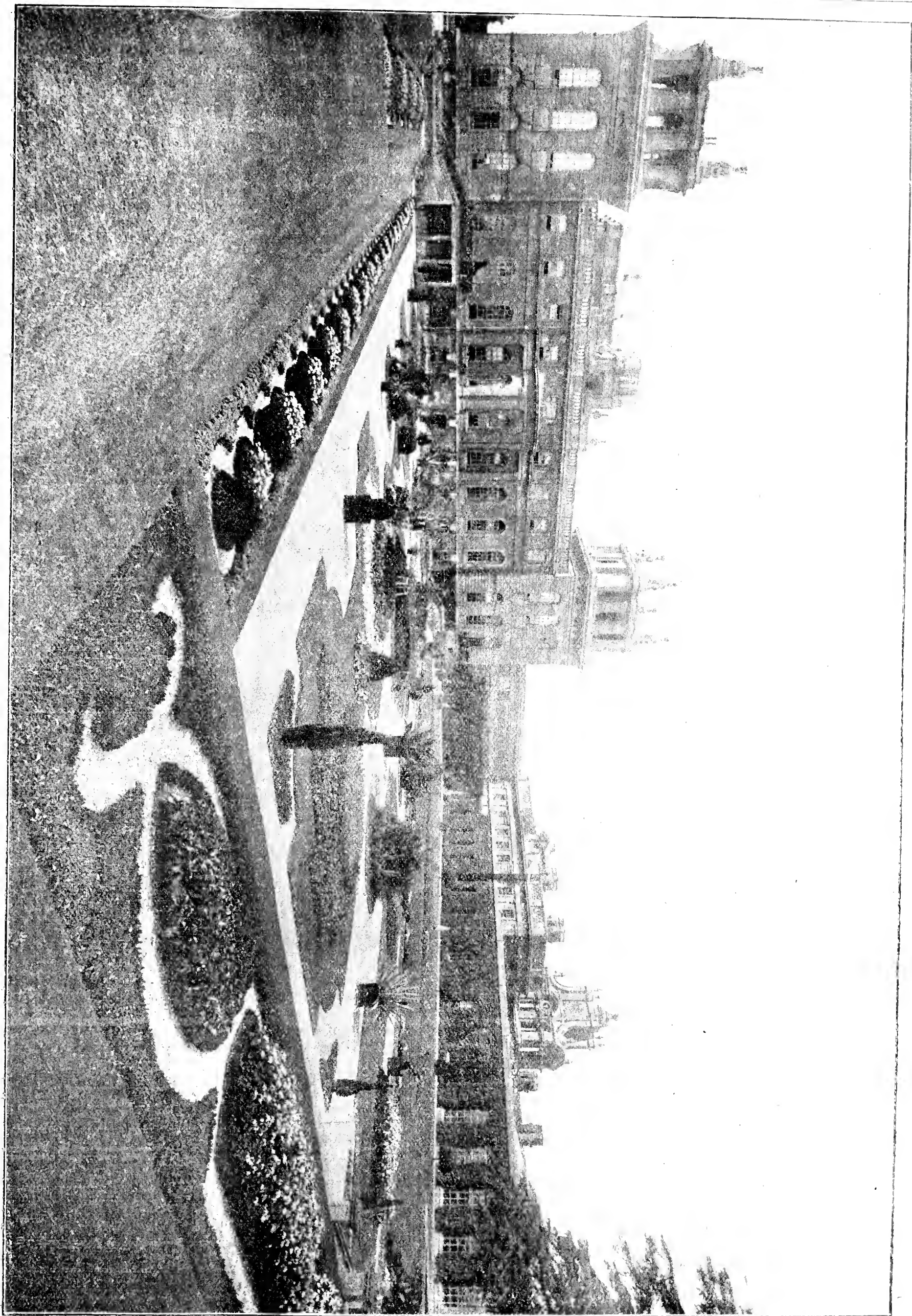


FIG. 46.—ITALIAN GARDEN, BLENHEIM.

vast numbers, and in almost all stages, but the veterans that have suffered from the hands of time take the lion's share of admiration. Elms, too, are splendid, as are various Conifers with Cedars, in exceptional form. It is useless pretending to give lists of names in notes of this nature, as if such were done the whole available space would be occupied by them alone, to the exclusion of items that are certainly, from every point of view, more interesting. Destined to still further enhance the interest of the estate are the *Abies glauca*, planted respectively by the Prince and Princess of Wales, Princess Victoria of Wales, and Princess Charles of Denmark on the occasion of a visit in November of 1896.

Perhaps the most advantageous place at which to commence will be the palace, whence may be obtained views that are charmingly diversified and yet simple. The principal entrance faces the north, and from beneath the noble Corinthian columns that support the massive masonry can be seen the monument towering to a height of upwards of 134 feet, that was erected to the memory of the conqueror of Ramillies, Oudenarde, and Malplaquet. This, similar to the mansion, stands on an eminence. In the valley between is a portion of the lake spanned by the grand bridge that is about 135 yards in length, and of proportionate width. From the south front, where are situated some of the state apartments looking over an expanse of lawn that has an area of 25 acres, and to pastoral scenery beyond, the eye finds the tower of Bladon Church in the distance. On the east lies the Italian garden, and on the west the ground falls to the lake with Rosamond's Bower to the right, and the pleasure grounds on both sides of the water, as well as the cascade on the left.

The Italian Garden, to which cursory reference has just been made, is very extensive, and must, when occupied with plants in the summer, present a gorgeous display. Of course, just at present it is practically empty, but an earnest of what was to come was seen in the thorough preparation that the beds were undergoing. The design is for the maintenance of its character strictly formal, and this is still more accentuated by the style of planting that is adopted. No mixing is allowed, but masses of distinct colours are formed with various suitable plants, which must obviously be provided in enormous numbers. The whole garden is sunk beneath the normal level, the sides being of closely mown thick turf. There are a few clipped shrubs here and in other parts of the garden, but these are not sufficient in numbers to form a feature or to warrant any reproach as to mutilation. To the right of the garden, as seen in the photographic illustration (fig. 46), is a long conservatory-like corridor stocked with large Palms. This structure has seen at least three changes, for, while originally erected for plants, it subsequently became a theatre, and has now been reconverted to a plant house.

A strikingly handsome system of planting large beds is adopted, and it is a method that cannot fail to meet with general appreciation. It has been very strongly advocated from time to time in the pages of the *Journal of Horticulture*, and consists in having huge masses of one kind of plant conspicuous for its foliage or the colour of its wood or its flowers, as the case may be. Nowhere better than in an estate of the magnitude of Blenheim could the method be exemplified, and the clumps of Golden Yew, *Prunus Pissardi*, and Golden Privet, to mention three only as examples, are splendid. Seen from a distance, the rich yellow of the last-named looks like a sheet of gold, while closer approach shows the dark stems of the *Prunus* in the foreground. In various suitable positions these are found, and in each instance the effect striven for has been secured. At no one time are the whole of them at their best, but they follow in rapid succession to form the cycle of the year. The American Garden, of days gone by, with its *Rhododendrons* and *Azaleas*, has now been almost exclusively planted in the manner described.

The lake is a magnificent sheet of water, which was, as Mr. Jefferies has already stated, thoroughly cleansed some time back. Its banks are clothed in verdure, trees and shrubs making permanent ornaments. It is near its margins that are seen some splendid Cedars, and here and there a *Taxodium distichum* rears its stately head. Even now before the buds have expanded this portion of the pleasure grounds is most charming though not so much so as when the trees will all be bursting into leaf or later when the tints of autumn herald the approach of winter. Thousands of Daffodils are pushing through the grass of the banks, and will ere long adorn the green carpet as with a cloth of gold. This is a most commendable practice, and one that, though it is growing in popularity, ought still to have considerably more attention. One of the attractions that has yet to come is now being established, and consists of the establishment of a collection of the best hybrid *Nymphæas* in the shallows of the waterside. These, it is confidently anticipated, will eventually make a superb display, though we question if it will ever be more imposing than the masses of white Lilies lower down the expanse of water.

Travelling now along the banks, crossing the water at one place, passing the cascade and re-crossing, we proceed again towards the gardens as distinct from the pleasure grounds. This is no short journey or an easy one, for slopes of sharp gradient have to be negotiated and winding paths of grass and gravel to be followed. A Rose garden *en route* claims a brief glance in passing, and its hundreds of plants would certainly produce an enormous number of flowers, but for one thing. It is unfortunately encircled by large trees, and, these being in close proximity, must send their roots beneath the Roses and rob them of food while the branches above will deprive them of light and air, that Roses, of all plants, appreciate in abundance. This will militate against the best success, which is a matter for regret when such care has been taken in the planting of good stock. Teas, Hybrid Teas, and Hybrid Perpetuals are all largely represented by the best varieties. In another position, an arch of Crimson Rambler and Clematis has been formed, which, when the plants are established, will be a gorgeous sight.

A few years back, during the time of the late duke, the collection of Orchids was one of the most renowned in the kingdom, and when, some six years ago, the stock was sold it became distributed throughout the length and breadth of the land, to the enrichment of many an orchidist's structures. In those days house after house contained nothing but Orchids—not in ones or twos but in hundreds of a kind. To-day, though Orchids are present, it is in comparatively limited numbers, other plants calling for a share of attention. This is, perhaps, better. At any rate, it lends wider interest to the place, for whereas in bygone days only the Orchid enthusiast felt at home, the general plant lover may find abundance to interest him in Blenheim gardens.

Carnations everywhere is the conclusion reached when the houses and frames have been seen. These plants are grown in thousands, and are represented from the cutting in a "thumb" to the specimen that requires a 12-inch pot for the accommodation of its roots. We look in vain for signs of the dreaded disease, and, needless to say, Mr. Whillans has no wish that it should visit Blenheim. There are flowers in numbers on the healthy plants, and Duchess Consuelo, the handsome yellow, is practically always in flower. Closely following the Carnation for popularity come the Roses, of which about 3000 plants are cultivated in pots, and rarely, indeed, can such a collection be seen in a similarly excellent state of health and cleanliness. Flowers sweet in perfume and rich in colour are always to be had, and, of course, during the winter months find high appreciation. Naturally enough all kinds of plants are cultivated, and almost invariably in large numbers, but it is unnecessary to give details of them. However, the Cyclamens are worthy a special note, as they are so magnificently flowered and carry splendidly marbled leaves. Chrysanthemums, too, in the infantile stage are abundantly in evidence, and will do their share towards the floral display in the autumn.

Other structures are necessarily devoted to Vines, Peaches and Neectarines, Figs, Melons, Cucumbers, Tomatoes and Kidney Beans, and in each instance it is easy to see that sound cultural methods are adopted. Under no circumstances could the importance of scrupulous cleanliness be better illustrated than by a visit to Blenheim Gardens. It will there be found to reign supreme over everything, and to this fact doubtless may largely be ascribed the excellent state of health which shines forth in all plants alike, whether they be grown for their foliage, flowers, or fruits. Not only within doors is the fruit eminently satisfactory, but also on the walls surrounding the gardens. These have almost wholly been clothed by the present garden, and with the exception of a few very old trees they are well nigh perfect. The wood is clean and sound, and such as may reasonably be expected to give remunerative returns to the grower. The vegetable garden, which covers an area of about 12 acres, is not stocked as it will be later in the year, but it is a department that is accorded the same attention as is given to all the others. Broad borders of herbaceous plants cross and recross the garden, and will adorn it with brightly hued flowers throughout the major portion of the year.

Though it cannot be said that all the features of Blenheim have been adverted to, it is necessary to draw these notes to a close. There are many other aspects equally meritorious that could, and perhaps ought to have been incorporated; but these must stay for a later day. The bothy, for example, is a model structure that alone is worthy of description and illustration if space were at command. Now we leave them, as we found them, in the care of Mr. Whillans, to whose industry and energy the estate owes so much for its present interest and beauty. It is a palatial home, and it is pleasing to be able to place on record that the efforts of both the Duke and Duchess of Marlborough tend not towards its maintenance alone, but also to its improvement.—H. J. WRIGHT.

APPLES FOR PERTHSHIRE.

IN a county so large in extent, so diversified in physical features, and presenting such a variety of soils as Perthshire, it is obvious that there is ample scope for the selection of varieties of Apples for cultivation. In the rich alluvial soils which prevail in the lower valleys Apples are extensively grown, and where intelligence is exercised excellent crops are obtained. This, however, is the exception, not the rule, at present in the once famous orchards in the Carse of Gowrie.

During the past two decades, or probably longer, the trees, with a few exceptions, have been left to take care of themselves, cutting out a dead branch here and there being the only pruning (if such it can be called) which the trees get, while manuring is unknown. The trees are old and debilitated, and in consequence of pruning being neglected are much overcrowded. This further impairs the fruitfulness of the trees by excluding the sun and air, thereby leaving the wood immature and liable to be destroyed by frost. Many of the varieties are also inferior, although there are some—such as Irish Green, Tom Montgomery, Catshead, and Winter Strawberry—which do well in favourable seasons. Lass o' Gowrie seems to be admirably adapted to the heavy clay soil of the Carse, and is probably one of the most profitable market varieties. It is an attractive Apple, and when not too ripe is of good quality, and always commands a high price. Many of these old-fashioned sorts have by lack of cultivation degenerated into mere Crabs, and the best thing that can be done is to have them displaced by modern varieties which are known to succeed satisfactorily in the locality.

There is no doubt that Apple culture, intelligently carried out, can be made a remunerative branch of farming in Perthshire. If the farmers would display similar sound judgment and common sense regarding fruit culture to that they do in the cultivation of cereals we should soon have abundance of fruit of the finest quality. The soil and the climatic conditions in many parts are favourable to fruit farming; all that is necessary are men educated in the most approved and practical methods of cultivation.

In commencing Apple culture the selection of a site for the orchard is the chief consideration. That which has a southern exposure should preferably be sheltered from the north and east winds, but not too much enclosed by trees. A low damp situation must, if possible, be avoided, as trees growing in such a position are liable to be injured by late spring frosts. Therefore a slightly rising ground is to be preferred, although many orchards in the Carse of Gowrie are only 25 feet to 50 feet above sea level.

Only varieties which have been tried in the district and proved satisfactory should be selected. We do not think it advisable to plant a large number of sorts, and would restrict the list to those that are of excellent quality and also productive. It is much more profitable to grow a dozen reliable sorts in quantity than three times that number the greater proportion of which produce nothing but leaves. Pruning should be systematically carried out from the start, keeping the main branches widely apart so as to admit a maximum of sun and air, without which well matured wood cannot be obtained. This is a matter of vital importance, as without thoroughly ripened wood sound Apples of high quality will not be produced.

Close-spur pruning, excepting in the case of one or two varieties, produces the most satisfactory results, after the trees have attained to fairly large dimensions. In a young state, root-pruning may have to be practised to check over-luxuriant growth and to bring the trees into a fruit-bearing state. After they have come into full bearing heavy mulchings of farmyard manure, annually, will prove beneficial.

The following have been tested in various localities and have proved free-bearing under orchard cultivation in the form of dwarfs and half-standards. Varieties for culinary purposes—Alfriston, Annie Elizabeth, Wellington, Ecklinville Seedling, Hawthornden, Lord Suffield, Stirling Castle, Warner's King, Tower of Glamis, Keswick Codlin, Cellini, Lord Derby, Lady Henniker, Bramley's Seedling, Lane's Prince Albert, Beauty of Kent, Manks Codlin, and Potts' Seedling. Regarding dessert varieties a smaller choice is at our disposal, still there are several first-class sorts which succeed admirably, such as Irish Peach, Worcester Pearmain, King of the Pippins, Court Pendu Plat, and Lady Sudeley.

In numerous private gardens throughout Perthshire the cultivation of the Apple is extensively and successfully accomplished. The trees are grown as dwarfs in the open garden, espaliers, cordons, fan and horizontally trained trees on walls. Under these varied forms beautiful and high-class fruits are produced if varieties such as Duchess of Oldenburg, Peasgood's Nonesuch, Bismarck, Golden Spire, Grenadier, and Rymer are chosen. Several dessert Apples are benefited by being grown on walls, notably Ribston Pippin, Cox's Orange Pippin, Red Astrachan, Kerry Pippin, Devonshire Quarrenden, and Fearn's Pippin.—WM. LITTLE, *Bridge of Earn*.



PHALÆNOPSIS MRS. J. H. VEITCH.

THE *Phalænopsis* that was shown at the Drill Hall on Tuesday, 14th ult., under the name of Mrs. Jas. H. Veitch, by the Chelsea firm of Messrs. J. Veitch & Sons, Ltd., was very distinct and peculiar in structure, as may be gathered from a glance at the woodcut (fig. 47). It is a hybrid that resulted from a cross between *P. Ludemanniana* and *P. Sanderiana*, the former being the pollen parent. The sepals and petals are about three-eighths of an inch in width, and are yellow with a tinge of green, and covered with numerous crimson brown spots. The small lip is white on the front lobe, with pale yellow marked with crimson purple at the base; the side lobes are white with

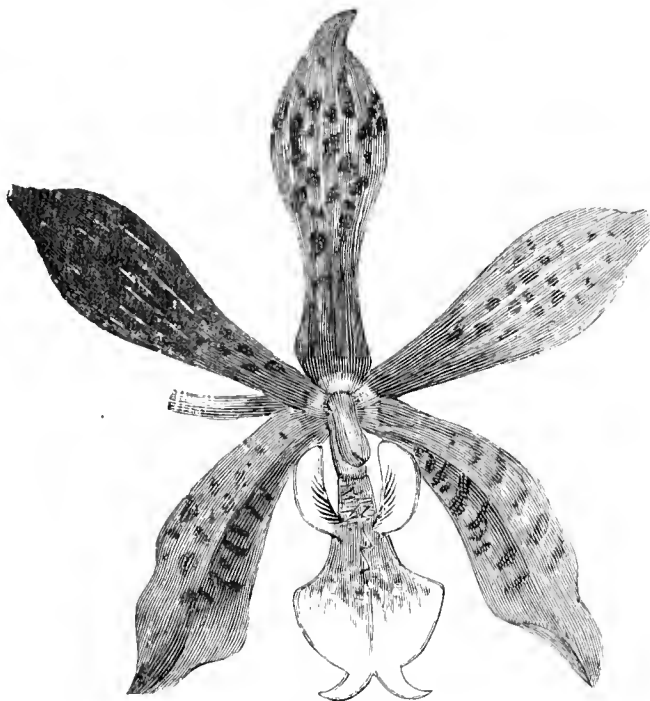


FIG. 47.—PHALÆNOPSIS MRS. JAS. H. VEITCH.

stripes of a similar colour to the base. The Orchid Committee of the Royal Horticultural Society recommended an award of merit.

NOTES ON PHAIUS.

THERE are many lovers of Orchids who have not a house to devote to their culture, and to those who desire plants that will thrive in a miscellaneous collection, *Phaius* must be recommended. They are, with one or two exceptions, of easy culture; they have noble foliage, and carry stately spikes, and even when not in flower are ornamental. It is not of the species that I wish to speak, although all will repay the attention bestowed upon them, but of the hybrids raised from *Phaius tuberosus* crossed with the East Indian forms which, thanks to the skill of the hybridiser, combine the beauties of the two parents.

First we have *P. amabilis*, which is a hybrid between *P. grandifolius* × *P. tuberosus*. It has white petals tinged with rose, and a claret coloured lip. Then comes perhaps the most beautiful of all, *P. Cooksoni*, which resulted from crossing *P. Wallichii* with *P. tuberosus*, and is intermediate between the two parents. *P. Marthæ* is a hybrid between *P. Blumei* and *P. tuberosus*; it is a most beautiful variety. The new *P. Normani* shows considerable variation, but all the forms are valuable, especially some of the yellow ones. *P. Sanderianus* and *P. tuberosus* were the parents.

When in active growth *Phaius* delight in abundance of heat and moisture, but when at rest they may be placed in a cooler house, and much less water will suffice. The compost I find them succeed well in is two parts of loam, one part of peat, with pieces of crocks about the size of hazel nuts, and a fair sprinkling of coarse sand. They may be propagated by division, but whenever they are repotted great care must be taken not to give any water till the roots get well hold of the compost, or the young growths are apt to decay. When growing vigorously a little weak liquid manure will do them no harm.—J. BARKER, *Hessle*.

THE FUTURE OF ORCHID GROWING.

JUDGING by precedent, the time must come sooner or later when our favourite plant, the Orchid, will be elbowed out by some new candidate for public favour. From being the aristocratic flowers grown only by those with long purses, they have become everybody's, and

anyone who can afford to build even the smallest glass house can, with little outlay, stock it with some of the finest, though commonest, of Orchids. On the other hand, the enormous prices that have recently been paid for novelties show that, while appealing to the latter class of cultivators, Orchids have not lost their hold upon the wealthy.

A healthy sign of the times respecting the future of Orchids will be found in the fact that in place of the botanical curiosities and rarities many of the leading growers are finding out the best species and varieties for decoration and cutting, and are cultivating them at the expense of the former. Our market growers are purchasing and collecting Orchids largely to meet the ever-increasing demand for the flowers when cut, while many of the florists' shops are now gay with gorgeous Cattleyas and other showy kinds.

In short, the Orchid is recognised as one of the loveliest plants in cultivation, and it will no doubt be grown in increasing numbers for its intrinsic worth, for its delicate beauty, its lasting powers, and its other good qualities that make it second to no other. Then Orchids are so distinct from every other family of plants that a child can pick them out. They have a quaint form, wonderfully diversified, but easily known through all its variations; the features of each individual kind are distinct, yet each present the same beautiful structure, and the texture of most of them is very delicate and beautiful.

In the future, again, there is no doubt that numbers of the fine hybrids now appearing will be largely grown for cutting. Most of these plants have a decidedly stronger habit than the species they have sprung from, and this, of course, will render them more useful for the purposes of decoration of all kinds. Take the deciduous *Calanthes*, for example. The true species and varieties are few in number, but there are already scores of hybrid forms, and they are being added to daily, each one a charming garden plant flowering at the dullest season of the year, and producing a quantity of blossom far exceeding that given by many other plants of similar size.

Hybrid *Dendrobiums*, again, are among the most beautiful of plants at this season, and no one can fall out with growing such a hybrid as *D. Ainsworthi*, for instance. One of the oldest, it is true, but still one of the best and freest flowering kinds in existence. The *Cypripediums* raised artificially are more numerous than either of the preceding, and extremely useful for cutting owing to the length of time they last either on the plants or when cut. *Cattleyas* and *Lælias*, though less numerous as yet, are being rapidly added to, and scarcely a week goes by without something new being added in one section or the other.

But we need not trust to hybrids alone for good garden plants, for the number of useful species is very large and varied, and there would be little trouble in selecting sufficient to keep up a fine succession of flowers the whole year round. This being so, and the fact that nearly every genus contains at least one species that is cheap, showy, and easily grown being considered, there is little doubt that, just as small collections have sprung up within the last few years, their number will be still further increased, and really the popularity of any plant is better assured when it is grown by a number of small cultivators than when, by its rarity and high price, it is confined to the few. There is an increasing demand for cheap, yet showy and beautiful Orchids, and this will not, I think, diminish even should the wealthy patrons of the cult become tired of paying their hundreds for rare and unique kinds.

—H. R. RICHARDS.

A MEMORY.

As an old amateur correspondent of the *Journal of Horticulture* for more years than I care to count, contributing a special article to accompany my picture in the "Veterans' Portrait Gallery," I propose to give a few personal reminiscences of Dr. Hogg, which will probably be of general interest. Although having had the privilege of making the Doctor's acquaintance early in the sixties, it was not until 1876 that the writer was fortunate enough to secure a visit into Herefordshire of this eminent pomologist, which was repeated on several occasions in connection with the exhibitions of Apples and Pears, which were held during 1876 and 1885, mainly for the selection of typical varieties, for reproducing in plates and sections in that standard work, "The Herefordshire Pomona." It is needless to say, without the valuable aid of the talented author of the "Fruit Manual" as technical editor, that valuable publication could not have taken up the position it is credited with as *the Pomona* of the century.

While in Herefordshire, Dr. Hogg, as may be supposed, took the greatest interest in the old extensive orchards throughout the county, and much regretted the neglected state into which most of them had fallen, making many valuable suggestions for their recuperation. Several varieties now in commerce he named, and brought into notice

especially the Herefordshire Beefing, and he was greatly struck with the rampant growth and luxuriant cropping of that excellent variety Braddick's Nonpareil, generally unknown and unvalued by the farmer.

Although not a personal speciality, Dr. Hogg always gave the prestige of his name and paper (is it not rightly called the Rose journal?) to the interest of the Queen of Flowers, while, although closely connected with the "Herefordshire Pomona" as Chairman of the Fruit Committee, and author of the two papers "On the Orchard and its Products," I have never failed in allegiance to my first and earliest love for the Rose, as instanced by assistance rendered in starting and resuscitating the National Rose Show, and inaugurating the West of



FIG. 48.—THE REV. C. H. BULMER.

England Rose Show over thirty years ago—an edifice on no broken column, but a pillar of strength and green old age.

It is, indeed, a privilege to have shone, how dimly so ever, under his reflected light; to have moved in a quiet and uneventful, but I trust not altogether useless orbit, in that restful and yet invigorating, promising (unless through one's own fault), seldom disappointing, devotion to Nature, and to deciphering, one by one, her secrets, as a lifelong labour of love and patience. There, with many other kindred souls reposing, as the shadows gradually lengthen—quicker far, as the goal is approached—I stand, awaiting the call to enter that fair haven where there are no shadows—no night to follow on eternal day.—C. H. BULMER.

PICTURESQUE GARDENING.

SELDOM, one thinks, is the higher enjoyment of "the purest of human pleasures" attained until the bonds of formality are loosed which restrain the ministering hand from aiding and abetting the careless grace and happy abandon of Nature. Our theme is no new gospel, yet it is one that has been neither too widely preached nor extensively practised. Trimness and tidiness are fatal to its development; geometrical precision is its abomination. Kitchen gardening is eminently practical, flower gardening pleasurable, but the third great phase is one which appears to bring humanity into a closer communion with the great kingdom of silent life; hence, I take it, is, in a sense, the greatest of them all. Let it not be understood, however, that any intention is present of praising the one to the disparagement of the others. Each and all have, of necessity, their own place in the fullest expression of gardening art, forming a trinity of utility, beauty, and natural grace, leaving nothing to be desired.

Here and there, in some fine old ancestral demesne, evidence is not wanting of the presence of a spirit of freedom, but, again, many there are in which it is almost conspicuous by its absence. There are no rules to guide the hand of the planter, or hard and fast lines to circumscribe its possibilities, for these are, indeed, boundless. To the student of Nature only is given the keynote of natural harmony, with power to transcribe to unwritten pages her most satisfying symphonies. It is easy to gather from all sorts and conditions of

places in the gardening world sufficient outlines to form not only an ideal picture but a possible one. Wandering last summer through the unkept portions of an old domain, and following the course of a streamlet to where it tumbled into a Bracken-fringed pool, it came as a surprise to find some dozen pure white spathes of the common Calla springing through the handsome foliage in their water bed. Thus treated the Calla is a unique plant for the position, but rarely seen. Hardest of the hardy, which does not seem to be generally known, or one might wonder that its claims are not oftener recognised. A mile away, in the same demesne, a miniature lake where once that yellow-buttoned vagabond Nuphar lutea reigned supreme, its aristocratic cousins, Mons. Marliac's beautiful hybrids, worthily hold the position; and, judging by fine specimens of *N. chromatella* and *N. rosea*, appear to be well able to hold their own. It is needless to compare the happy surroundings of these lovely Lilies with those of the tank, tub, or formal fountain to which they are too often relegated, yet scarcely superfluous to point out some of the bye-ways into the kingdom of picturesque gardening, by most of which admission is practically free.

Taking an annual peep, in late summer, into an old fashioned garden, where all is not only done decently and in order, but well done, it is astonishing to see how the Torch Lilies, *Tritoma Uvaria grandiflora*, have usurped space in the herbaceous borders to the detriment of lesser things. If wishes had wings, fain would one fly with them to the bare banks of a fairly extensive lake near at hand, which, to me, seem always hungering for their company. As the shuttle of thought flies through the loom of memory comes back a feature of one particular place where a pretty pond in the foreground of the shrubberies was adorned on the one side by a bold grouping of Tritomas. The glow of the torches, in their season, duplicated by reflection in the water, left no question as to suitability of position. It was veritably the plant for the place, and the place for the plant. Yet impressions of failures are second only in value to those of success, and possibly more educational. Probably the above happy results were accidental, for on the opposite bank the same planter had dotted a number of *Arundo conspicua*, like "Daisies all of a row." It had been done designedly, doubtless, and so had the Tritoma planting, but here no design was apparent.

Work without design must perforce bring many unfortunate illustrations into a chapter of accidents, and the best book of design of which I know is that whose impressions are deeply graved by a life's observation. It teaches one to know his prerogatives, feel his power, and admit his responsibility as a subject under the imperial dominion of Nature in the kingdom of picturesque gardening. Knowing, feeling, and admitting such, he will rarely err or fall short in the labours of love. Every vantage point, from the top of a crumbling wall to the depths of a dell or dingle, is suggestive. One looks at a bare, unlovely, loose-topped wall, and feels ashamed of its nakedness. Heigh, presto! and over many years and many miles memory brings back such another, but partly clad in a thick glowing coat of *Erinus alpinus*. Of such is the beauty of fitness of thing to a purpose; the same plant in bed or border being insignificant in its humility.

Meek Alpines, bold Gunneras, feathery Arundos, quaint Irises, Sumachs, and such plants as crown the dying year with a glory of crimson and gold, each seem to adapt themselves to certain positions, which not only enhance their beauty, but is duly reciprocated in their surroundings. A host of tangling, twining, trailing plants, ever trying to escape from the bondage of tie and trellis, on the one hand; gnarled and naked tree stumps, crannied cliffs, old bridges (and new ones) on the other; all waiting for the ministering hand to bring them into happy union. Infinite variety, endless interest, surpassing beauty, all such good things are provided for those who enter into the kingdom of picturesque gardening, where shears and prunings cease from troubling, and weary gardeners are at rest.—E. KNOWLDIN.

CAMELLIAS.

I READ recently in one of the horticultural publications the following words:—"Mr. Wm. Paul does not share the general impression that this fine old plant is as dead as Queen Anne (commercially), or he would not continue to devote so much space and attention to it." No, my friend, no; I do not share that impression. The Camellia is not even "commercially" dead, but living and influencing (if in a small and select circle) in the full enjoyment of life, waiting until the foolish fantasies of fashion shall be corrected, and transformed by taste and reason. If flower hawkers and fashion seekers look upon it with disdain, there are those still living who love and cherish it. I have faith in the past, present, and future of these lovely evergreen shrubs or trees, for trees they will grow into if given the necessary space for

tree development. It is true that there are fashions in gardening as well as in other things, and it is well that it is so, for as a sequence many bright and beautiful things are brought within our view. But few of us follow all fashions, and I certainly should not think of following a fashion which ignored the most beautiful of all our easily cultivated flowering evergreens.

Then as to change. The mind of man is so constituted as to delight in change. Even in this dull climate of ours, after much sunshine we delight in shade, after a long spell of dry weather we delight in rain. But the change should either bring joy to our senses by the uprising of equal or superior beauty, or comfort to our hearts by the reflection that it is a blessing in disguise. With their permission I would ask my fashionable friends whether all the fashionable flowers which have supplanted the Camellia in recent times surpass or equal it in beauty or usefulness. From November to March, all through the winter months, one has from these almost hardy evergreens matchless foliage and a succession of flowers of almost unsurpassable beauty.

It has been said that the Camellia is difficult to cultivate. In my opinion, however, it is as easy to grow as a Laurel, a Laurustinus, or a Sweet Bay. But it is not hardy and should not be grown out of doors except in the south or west of England, or elsewhere against walls at the seaside, or in other favourable conditions of soil and climate. Few *Journal* readers can require instruction from me on cultivation, but to those few I may say, Grow Camellias in turfy loam or turfy peat and old cow manure, with sand if the loam be of close texture. Prepare the soil well in advance. In potting press the soil very firmly round the roots, but do not hammer it down into an impenetrable mass. The plants should be freely watered when flowering, and even more when growing, with very careful and moderate supplies at other times. Drainage should be perfect. A low temperature, but over 32°, is desirable in every month excepting April, May, and June, when 50° to 60° by night, and 60° to 75° by day, with shade during the hottest part of the day, are most suitable.

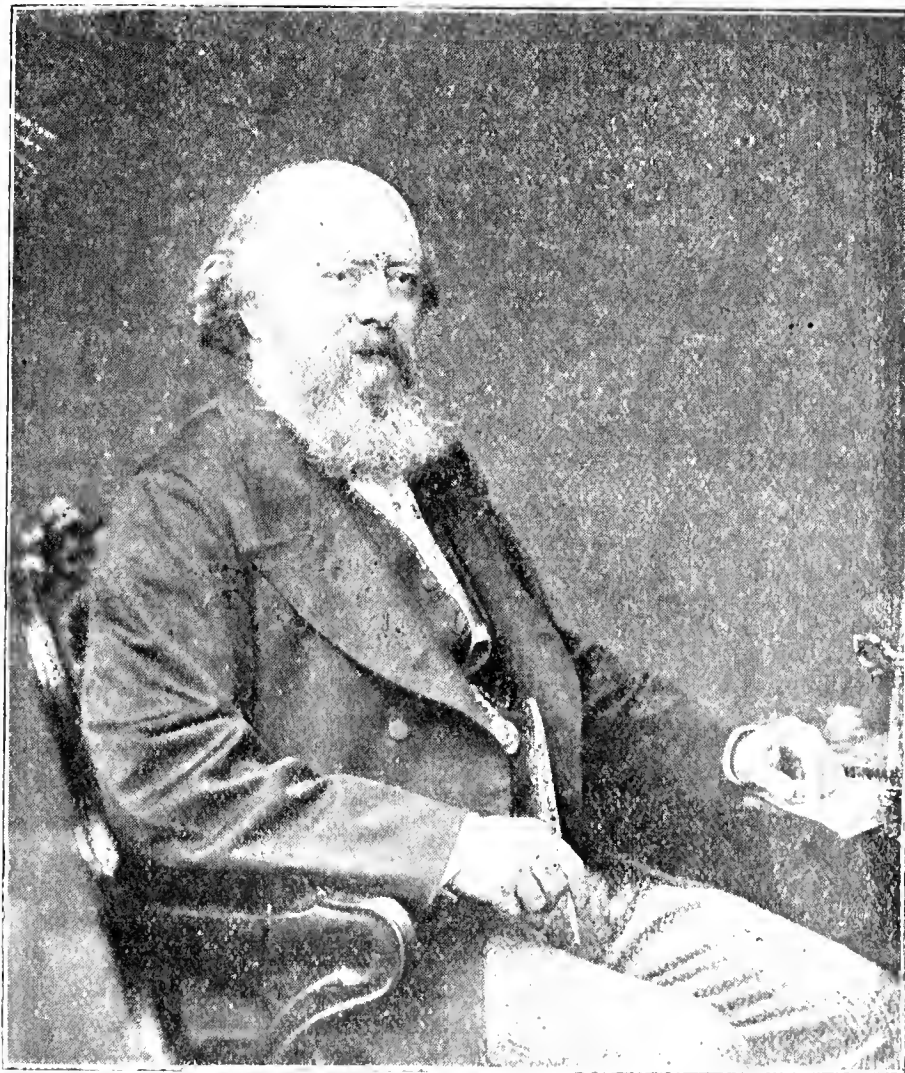


FIG. 49.—MR. WILLIAM PAUL.

Syringe freely when in active growth. Prune fearlessly in autumn if the plants become mis-shapen, but do not cut back if you can help it into older than one or two seasons' previous growths. Never mind sacrificing a few flower buds when pruning. At the end of June remove the plants to a north border where they get only the early morning sun, and let them remain there during July, August, and September. Reconvey under glass at the end of September, merely excluding the frost unless early flowers are wanted, when more or less heat may be employed.—WM. PAUL, *Royal Nurseries, Waltham Cross, Herts.*

LOOKING BACKWARD.

IN the late "forties" I see myself entering the gardens of my father's employer, a large cotton manufacturer, at a place twelve miles N.E. of Manchester, and on the western slopes of the Pennine range which forms the backbone of England. Gardening was not the proposed avocation mapped out for me by my parents. My father, who was the accountant of the works, had intended training me up to his profession, so that eventually I might be able to take his place. A severe illness, caused in large measure by too close indoor confinement, induced my parents to alter their plans, and, in consultation with my master and mistress, who always took a special interest in me, brought about my admission into the gardens.

I had always, from my earliest years, had a taste for gardening, from the time I grew my first pot plant—a Musk—in an old cracked teapot of my mother's, and pruned her pot Rose so effectually that, as she ruefully, but laughingly said, "It must be well pruned, for there is only the stump left." The gardener I was put under was one of the good old-fashioned type—a Yorkshireman, essentially a practical man. He was one of the best men I have ever seen with all gardening tools, and specially with the spade. He was no book man—he rather scoffed at writing gardeners; but he was the best herbaceous plantsman in our neighbourhood, and a florist of the old school whose favourite flower was the Pansy. He taught me how to know a good flower when I saw one, and as to shrubs of all kinds, evergreen and deciduous, his knowledge of them was like Sam Weller's of London, "extensive and peculiar" and thorough.

Being always a reader, and a frequenter of the booksellers' and newsagents' shops somewhere about the beginning of the "fifties," I made my first acquaintance with the then *Cottage Gardener*, and from it I got visions of a larger world of gardening than up to that time I had any idea of. I read each weekly number from first page to last. I read them again and again, and the writers' personalities became clearer to me each week, so that Robert Errington, Donald Beaton, Robert Fish, Thomas Appleby, and others became my personal friends with whom I held converse week by week, and to whom I looked up with the reverential awe of a young hero-worshipper. My first communication to the *Cottage Gardener* was somewhere about the year 1854.

In 1856 I came into Nottinghamshire to be gardener to Mr. William Sanday, the great Leicester sheep and Shorthorn breeder, and my facilities for advancing in gardening were there strictly unlimited, the encouragement to go on to higher things was of the heartiest, and through all these years I occasionally dropped notes to "our Journal," generally under the pseudonym of "Excelsior" or my own name. I have stayed in the county all through, the last twenty-six years with my present employer, Mr. Frederick Wright, J.P., of Lenton Hall, Nottingham. Notts is a county, I consider, good enough for any man to live in, and its beautiful county town, or city now, is one which draws out daily more and more my admiration and love. My later writings as "An Old Provincial" will speak for themselves.—N. H. POWNALL, *Lenton Hall Gardens*.

P.S.—After concluding the writing of these notes the *Journal* brings word of the death of one of the most valued contributors of the "sixties and seventies"—"Wiltshire Rector." He was one of those writers whose gentle spirit put such a charm into all he wrote, and whose "gay wisdom" enlightened his words, and drew to him the love of readers of all degrees of gardening life. It is no disparagement to the other writers of the time to say that he was the first to be read as soon as the *Journal* was opened. We are the poorer to-day by his death, and I am sure we shall all unite in saying, 'Make him to be numbered with Thy saints in glory everlasting.'—N. H. P.

MODERN VEGETABLES.

WHILST we find seedsmen's lists overcrowded with the names of new varieties, or selections, of diverse vegetables, we have to look for distinctions and improvement in actual growth. But the modern development of vegetables, if slow, has been sure, and if the variations or improvements have been slight, yet have they been invariably progressive. It is difficult to define the advance seen in the novelty of this year, as compared with that of last year, but if we compare the best latest with the best of twenty years ago, then is the advance most marked. How specially this is so is well evidenced at our exhibitions, when collections of vegetables are staged, showing not only the highest of existing excellence in variety, and also the highest art of the cultivator, but even also the most advanced taste in setting up or in arrangement; so that whilst a fine collection is a work of taste in display, the production is a work of art in culture, and the superb variety is the evidence of long work in cross breeding and in selection.

We have in these modern days such splendid products that it is only natural to ask whence can come, or in what form will come

other improvements. Most certainly they can be only infinitesimal if for no other reason than that existing products are so superior that little room for advance remains. To what an extent have garden Peas developed. The old round whites and blues, hard and flavourless, and not great croppers, yet to our progenitors valued varieties, are fast passing out of cultivation, more because there are so many of the richer flavoured, sugary, wrinkled Marrows to supply our needs. We have delicious wrinkled varieties for our earliest as well as for our latest needs, and for all the long season. We have the dwarf, medium, or tall in height, and in every case of the finest excellence. What beautiful pods are now seen on exhibition tables, how long, well filled, green, and of the most perfect form and high flavour. No mere large pods will pass muster now, because there are such splendid varieties that are fitted for the table of the gourmand, and are equally at the command of the poorest.

What a change has been effected in Cauliflowers too, and with the help of the dwarf earlies and of the late giants we can have these for consumption and for exhibition for a long season. How solid are the heads now, how white, how easily produced, and how fine and effectual are they on the exhibition table. A generation ago no one could show such Cauliflowers, and for so long a period, as gardeners now can.

Few vegetables exhibit development more markedly than does the Onion. The Liliputians of older days have become the Brobdignagians of the last years of the century. No longer are bulbs weighed by ounces; they have become so big that their weight is counted by pounds. Ailsa Craigs, Records, Exhibitions, Lord Keepers, Ne Plus Ultras, Excelsiors, and many of others, vie one with another—that is if they be distinct—in producing, under what are also modern conditions of culture, bulbs that are not only of marvellous dimensions, but of



FIG. 50.—MR. N. H. POWNALL.

remarkable beauty in form and of matureness and solidity. Truly we seem to have reached in Onion production to a point beyond which it is difficult to pass.

But whilst even the few things named serve to show how much the modern cultivators excel the old growers in productive skill, just as the products themselves show their great advance on earlier ones; none shows this advance in variety, and in culture, as does the Tomato. Here we have a product that has leaped from comparative worthlessness into marvellous popularity, and is now one of the most valued of highly cultivated vegetables. Not a gardener in the fifties could have dreamt of the popularity in store for the Tomato,

and the new labours and duties its culture would cast on those whom we now term modern gardeners. What a bound has been evidenced in the change from the old coarse and sutured forms to the perfect and beautiful fruits of to-day! What crops do our modern ones produce! How wonderfully are they consumed as ordinary edible fruits! The supply, so good, so improved, so attractive, so superior in every respect, has tempted humanity to partake of them, and thus created the demand.

We may turn to our Beans, and find in the Runner or climbing section much striking development. Not of the old, short, thick, and too soon ageing pods of earlier days, but produced in great abundance—long, handsome, tender pods of the highest excellence, and giving in length and productiveness double the crop produced by the old strains. In Longpod Beans our Exhibitions, Leviathans, and Seviles are unrivalled, and in even the Dwarf Kidney race there is advance in quality and pod production every year. In Carrots, in Beets, in Turnips and Radishes, in Cucumbers also, the advance has been continuous and of the best.

If there has been no appreciable addition to the quality of the Potato tuber, there has been material advance in productiveness. Main Crop, Up-to-Date, The Crofter, Ellen Terry, Pride of Tonbridge, Challenge, Snowball, Windsor Castle, Reliance, and many others testify to the wonderful tuber productiveness of modern Potatoes. We have seen in Cabbages, with undoubted development in quality, rather a recession in quantity, as the modern taste now favours smaller but much tenderer and more precocious varieties than were formerly in most favour. Even Spinaches are superior now to older varieties, and in Longstander and Victoria distinct superiority over the old Flanders is found.

But whilst during the past two decades improvement in kinds through superior varieties has been marked, we have seen very few additions to our already considerable list of kinds suitable for consumption. The most noteworthy is the Chinese Artichoke, or *Stachys tuberifera*, for the tuberous *Oxalis crenata*, pleasing as it is, can hardly be classed as a new vegetable. However, we have grand selections, triumphs of patience on the part of raisers and seedsmen, whilst gardeners by their skill in culture have done their part worthily also in the great work of vegetable advancement.—A. DEAN.

THE AURICULA.

So many people write to me about the Auricula, and I have concluded that a few words in the *Journal* may be useful. The Alpine Auricula—seedlings and hybrids from *Primula pubescens*—is the easiest to grow. They make splendid rock garden plants, or as isolated specimens in the front row of herbaceous borders. A rich deep clayey loam suits it best, and if it is moist all the better, as the plants dwindle away if grown on shallow, light gravelly soils. The finer varieties are grown in pots, and they are beautiful when in flower. All that they require is a cold frame, and the plants must not be very far removed from the glass, or the leaves and flower stems will become drawn. This is avoided by removing the lights altogether whenever the weather is favourable; and as none of the true Alpines has mealed foliage a shower of rain is beneficial, though of course small plants in flower pots would be injured by long continued rains, and I do not like them to be exposed to rain at all during the late autumn and winter months. The flower trusses begin to show early in March, and the blossoms appear from the middle to the end of April. I have had them in flower well into May by keeping the plants in a frame on the north side of a high wall. I showed a small collection at the Tempis Show last year in May; but as the great northern Auricula grower, the Rev. F. D. Horner, aptly remarked—

“The Auricula in May
Has had its day.”

And truly we do not want it in flower with the Tulips, as happened last year, for in the same tent with my simple Auriculas were the gorgeous cups of the show Tulip.

The pot culture is very simple. The compost for both Alpine and Show varieties should be four parts of good yellow fibrous loam, one part of decayed manure, and one part of leaf mould, with a little sand if necessary. I often wondered how the old growers managed to keep life in their plants, with the rich compost they prepared for them, until I read Emmerton's book, wherein he is very particular in insisting on the potting materials being mixed two years before using, and it was to be well turned over frequently in the course of the twenty-four months, therefore the washing and bleaching must have pretty well taken the fertilising properties out of the goose manure, the sugar baker's scum, the blood manure, and other unwholesome ingredients. Here is the recipe of Mr. Isaac Emmerton, the celebrated Auricula grower:—Two barrowfuls each of goose manure steeped in bullock's blood, sugar-baker's scum, night soil, and fine yellow loam.

That is six barrowfuls of strong manure to two of loam. It would undoubtedly require a considerable amount of turning and exposing to summer's sun and winter's frost.

The Show Auricula is divided into four sections—the green edge, white edge, grey edge, and selfs. The green-edged varieties always have green leaves without meal or farina on the foliage, but the others may have green or mealcd leaves, and certainly some varieties have very beautiful foliage, so densely coated with fine powder as to be quite white. There is more care required in growing Show Auriculas, as



FIG. 51.—MR. JAS. DOUGLAS.

they will do no good planted out, but always require the shelter of a frame. They are propagated by offsets, which take from twelve to eighteen months to grow into a flowering size. They require some care in the offset stage, and it is better to leave them on the parent plant until they are rooted. Drain the pots carefully and pot firmly, keeping the plants down to the fresh leaves, as they are apt to produce long bare stems. The largest flower pots used ought not to be more than 5 inches in diameter for the very strongest growing varieties.—JAS. DOUGLAS.

— MUSHROOMS.—It is not often that growers of Mushrooms give instances of failures, because perhaps their relation would, to them, appear to convey some technical errors that are not creditable. It is rarely that the stables are blamed for partial or complete failures, but it is, nevertheless, a fact, that some can be traced thereto. Horses, and especially those under preparation for hunting, are given drugs, which are directly responsible for failures in Mushroom beds when such manure is collected. I have proved this very clearly this season, one bed made under those circumstances producing very few Mushrooms, so few, indeed, that its retention was not considered profitable. Its removal satisfied me that the course was the right one, as no signs of activity for present or future bearing were apparent. Beds made later when the horses were fed on natural food only have given regular supplies, the treatment of the manure in preparation being the same, their after attention identical, and the same house accommodated them. It is generally known that manure from horses medically treated is unfavourable for Mushrooms, and it is well to inquire when a course of medicines is being submitted, so that the manure then can be otherwise employed, and thus save labour and disappointment, which is almost certain to arise.—W.

CULTIVATION OF CELERY.

SWEET and nutty Celery is regarded as indispensable in the majority of gardens. The season for its use extends from September to April, but if the demand is great, or the culture of the crop not carried out in the best manner, the supply usually runs out at Christmas or soon after. On strong retentive soils Celery is liable to decay, hence when grown on ground of this character protection must be afforded the plants from excessive damp and frost, especially that intended for late supplies. This can be done by nailing together two boards at right angles, forming a V-shaped cap or protector, which can be readily placed on or taken off as necessary. Temporary protection is afforded by a light covering of dry litter or bracken. If this remain on for long in wet weather it will do harm.

Seeds for furnishing plants for the main crop must be sown in March or at an early date. It is best to sow on the broad surface afforded by a pan or box, so that the seed may be distributed thinly and seedlings raised of a sturdy character, these being more easily handled when the time for pricking off arrives. Drain the bottom of the pan or box well with crocks, and put over that the rougher parts of the compost. Then fill with a compost of rich fine soil mainly consisting of loam, manure, leaf soil, and sand. Make the surface fine and level, and give a good watering with hot water through a fine rose. When the soil is thoroughly drained sow the seeds evenly and moderately thinly, dredging a layer of fine soil as a covering. The best position for the seed pan or box is in a temperature of 58° to 60°, or on a mild hotbed in a frame. Cover the soil with a pane of glass and paper to prevent rapid evaporation and consequent drying of the soil.

Celery takes two or three weeks to germinate, hence it is important to maintain the soil in a uniform condition of moisture. Should the surface soil become dry it may be moistened by dewing it over with the syringe in preference to heavier watering with the rose. After germination the seedlings require warmth, moisture, and light, and when well established a light airy position in a cool structure. This treatment gives them a good opportunity to attain to a sturdy habit, provided the sowing has been carried out so as not to cause an overcrowded condition.

The importance of having the seedlings as strong as possible at the time when ready for pricking out is apparent when handling the small plants. The stronger are better furnished with roots, and the stems do not bend from weakness. The seedlings must be pricked out in rich soil on a spent hotbed, or in a frame with a layer of manure and a few inches of soil. Another method is to fill boxes 4 inches deep with good soil on a base of decayed manure as drainage. Place the seedlings about 4 inches apart. Stand the boxes in a frame close to the glass, keeping the lights closed for a time until fresh growth is made. The same treatment must also be accorded the plants pricked out in a frame or hotbed. Heavy waterings will not be needed, but slight sprinklings with a syringe or fine rose in the afternoon are of the utmost benefit. Afford air gradually in increasing quantity as the plants advance in size. During mild warm weather the lights may be drawn off, and fully expose for some time in May to harden for final planting early in June.

The trenches in which Celery is to be planted may be of a width to hold either a double or a single row of plants. For a double row cut the trenches 15 inches wide, and for a single row 12 inches. A good spit in depth is all that is required. Cut out the trenches straight, and place the soil removed smoothly on each side. In each trench place 6 inches depth of good decomposed manure, and mix well with the loose soil in the trench. This may be done a few weeks before planting, so that there is no delay when the plants are ready for transferring.

Dull weather just before rain is the best time to plant, and the soil in which the plants are growing should be moist in condition. The plants from boxes will lift out with balls of roots permeating the manure, and their removal causes little or no check. From the frames, too, the plants may be readily removed, but it is not desirable that they should be pricked out on a deep bed of manure, or the plants, if left too long, will become rank.

Water after planting to settle the soil about the roots, and should dry weather continue free supplies must be afforded until rain comes. Remove weeds from the trench, and sucker-like growths from the base of the plants as these appear. Abundance of water will be required as the plants grow. The soil may be loosened occasionally, and after the first trimming away of suckers chop down the soil on each side the trench, levelling it round the plants. This is preliminary to earthing, which should not be commenced before growth has brought the plants to a good size. Several earthings are better than placing the soil round all at once. The soil must be kept out of the

hearts of the plants either by a tie of matting round the leaves, or holding them closely together with the hand. Two persons can do this better than one. The final earthing may be carried out to within 8 inches of the tops of the plants, completing it about six weeks before wanted for use.—E. D. SMITH.

NOTES ON RASPBERRIES.

THE time has arrived when the final touches must be put on the Raspberry plantation, if they are not already accomplished. The work connected with the winter treatment varies in accordance with that bestowed upon the plants in the previous summer and autumn. If their sucker growths were reduced to a quantity sufficient for supplying the requisite number of canes for fruit-bearing this year, and the old bearing wood cut out in the autumn, then only the shortening of the fruiting canes remains to be done, so far as pruning is concerned. There is no gain, however, in crowding, so that if there is any tendency in that direction it may be rectified as the course of tying proceeds. Some still use stakes for supports, but the advantages of wire trellises are so many, that where it is practicable I would advise their early adoption. Two strands of wire will do, but three make neater rows.

The winter, so far, has been very favourable for Raspberries; in severe ones much damage occurs to the unripened tips and the buds, many of which fail to start. This happens, perhaps, more on heavy soil than that of a lighter character, and particularly where the ground is not sufficiently drained. Under no circumstances is it advisable to shorten back the canes until February is well advanced; pruning encourages water to gather in the pith, which, if frosts follow, causes much damage. When tying and pruning proceed together, it is easy to adapt one to the other. In some seasons it has been observed that unshortened canes brought to perfection the best crop. This points to the fact that the growth must be well ripened throughout, and this condition certainly ought to be in evidence after such a tropical summer as the past one proved to be. I have seen some gardeners bending down the points of the canes and tying them thickly to the top wire of the trellis, but whether an extension of crop justified the practice, I could not determine; certainly appearance did not.

Raspberries being surface rooting, deep digging among them is fatal to their well doing, especially if the following summer should be a dry one. If seedling weeds are numerous in the autumn through adverse weather, they may be skimmed off with the spade sufficiently deep to lightly bury them, and with a fairly heavy dressing of manure put on early become in time entirely suffocated, and instead of being an eyesore are by digging converted into plant food. Early attention to the Raspberry quarter allows of fresh strawy manure being used to advantage. Its soluble properties are carried downwards by the winter's rain, the slow decay of the insoluble matter provides food for roots in summer, and the straw makes the work of pruning and training easy and cleanly to the feet, advantages that cannot be other than beneficial to those who have the work to do, and the prospective crop as well.

The wet winter has very much hindered the work of planting, but the plants being early in their growth and root, there would be yet time to put this into practice in extreme cases. I should not in the least hesitate to remove plants at home, or purchase from a local nursery, but from a distance it would be perhaps better to defer planting until the autumn. The advice has been oft repeated, but the mistake is still made of leaving newly planted canes unshortened or only lightly pruned. No greater error can be imagined in Raspberry growing. The better practice is for all newly planted canes to be shortened to within a foot of the soil, which will be the means of providing a strong growth that will fruit next year. Mulching of new plantations is decidedly advantageous, and if it is possible, give water when the weather is continuously dry and summerlike.

Unless a high state of cultivation is practised, or the ground proves well suited to the Raspberry, it shows signs of debility after a few years, and the crop so depreciates that despair rather than pleasure becomes the ruling passion. In most gardens, however, it is a crop for which there is a demand that is seldom fully met, so that its removal from one site to another must be carried on piecemeal. Beds infested with bindweed or couch grass can only be cleaned by drastic measures, the best of which is by planting on fresh and clean ground.

Of varieties there are many, but the best of all, according to my experience, is Superlative, and those who do not number this among their collection, however small it may be, lose a good deal of pleasure as well as profit. Baumforth's Seedling is my next favourite; both give berries of large size, the first named in particular, and it is also distinct in every other respect.—W. STRUGNELL.

KEW IN EARLY SPRING.

As would naturally be supposed in a garden which possesses such large and varied collections of plants as Kew, a walk through at any time of the year is interesting and instructive; but to the ardent lover of plants probably no period has more charms than the early spring. After the dull days of the last three months, when hardy plants have been dressed in winter garb, it is particularly pleasing to note each flower as it appears, each tree or shrub as its buds begin to expand, or the delicate colouring of each young leaf.

In the arboretum during this time many beautiful sights are to be seen. Standing out conspicuously in exposed places are numerous groups of coloured stemmed shrubs, which on fine bright days are particularly attractive. Some of the handsomest are the red and yellow stemmed Willows about the lake, the red stems of *Cornus sanguinea* and *stolonifera* in other places; the bright brown stems of *Philadelphus* and *Neillias*, or the white stems of some of the *Rubus*, *R. biflorus* being the most conspicuous. In addition to these, a number of shrubs are to be found in flower as early as the end of January, while towards the end of February a considerable number may be seen. Of these some of the chief ones are *Erica carnea* and the variety *alba*, *E. hybrida*, *Daphne Mezereum*, *Hamamelis*, *Rhododendron dauricum* and *Nobleanum*, *Prunus Davidiana*, an early flowering form of the Almond, *Lonicera fragrantissima* and *Standishi*, *Chimonanthus fragrans*, *Spiræa Thunbergi*, and in sheltered nooks and corners quantities of *Rhododendron præcox*. The Bamboo garden shows how useful these plants are if planted in sheltered positions, their graceful arching stems covered with bright green leaves, making a charming picture among the surrounding deciduous trees.

In March the number of flowering trees and shrubs shows a considerable increase. Some of the most noticeable are *Pieris japonica*, with its beautiful arching racemes of white flowers; and *P. floribunda*, with its shorter erect racemes; the *Forsythias*, with their wealth of yellow blossoms; *Prunus divaricata*, *cerasifera*, *pendula*, *amygdalina*, and numerous others; *Ribes sanguineum*, *aureum*, and others; *Corylopsis spicata*, *Erica med terranea*, *Dirca palustris*, and a host of other plants. During this month, if the weather is fine, choice *Rhododendrons* may be seen in flower in the *Rhododendron* valley, some of the most striking being *R. fulgens* with its blood-red flowers; *R. Luscombei*, and several good garden hybrids.

The rock garden is always a source of interest. At each turn some fresh feature is seen, every stone shelters some choice plant, and each day shows an addition to the number of plants already in flower. On February 22nd thirty-six species and varieties were noted in flower, some of which were *Galanthus Elvesi*, *Ikariæ*, *nivalis* and others, *Saxifraga ligulata*, *Daphne Blagayana*, *Arabis albida*, *Narcissus minor* var. *minimus*, numerous *Hellebores*, *Iris reticulata*, and the common *Primrose*. The collection of *Crocuses* is very pretty, at present a large number being in full flower. In the herbaceous ground the small house devoted to Alpine plants is an attractive feature in spring. A select collection of the most ornamental things are grown in pots, and put into this house as they flower, a display of the very choicest Alpine plants being kept up for several months.

During recent years much has been done in the way of naturalising bulbs and other plants about the grounds at Kew, and by this means some charming pictures are made. Near the Palm house a mound is devoted entirely to wild gardening. In the arboretum another piece of ground is given up to the same purpose, while in other places large patches have been planted with bulbs and other things, all of which go to form a charming picture during spring. On the mound near the Palm house large patches of *Snowdrops*, *Crocuses*, *Daffodils*, and *Scillas* may be seen following each other in quick succession. In other places near by grassy mounds are thickly dotted with *Crocuses*; while a collection of hardy *Ferns*, among which *Primroses* and *Snowdrops* have been planted, look charming, the contrast between the old brown *Fern* fronds and the flowers being fine. In the arboretum large tracts under trees and shrubs are planted with *Snowdrops* and *Chionodoxas*, which are now sheets of white and blue. Later on large patches of *Daffodils* and *Bluebells* will be seen. One of the most charming features is the *Rhododendron dell*, the sides of which are planted with *Daffodils* between the *Rhododendrons*, the dark green and yellow contrasting admirably. For lovers of spring bedding a great display of *Tulips*, *Hyacinths*, and *Narcissi* is made in the beds near the Palm house and broad walk.

Indoors, to the majority of visitors the greenhouse No. 4 has certainly the greatest attractions. In this structure a fine display of the best flowering plants is always to be seen. At the present time some of the most striking are *Cyclamen*, *Hippeastrums*, *Primula stellata*, *Peristrophe speciosa*, *Cineraria kewense*, and *Camellias*; forced plants such as *Pyrus floribunda*, *Viburnum Tinus*, *Rhododendron sinense*, *Staphylea colchica*, bulbs of various sorts, and many other things. In the T range *Begonias*, *Acanthads*, and *Orchids* make a nice display. In the Palm house *Brownias* are the most striking of

the flowering plants, while in the temperate house *Himalayan Rhododendrons*, large *Acacias*, and *Camellias* are responsible for a fine show. In addition to the plants mentioned many scores of others could be added if space would permit. Those enumerated, however, will give some idea, if a poor one, of the number of interesting plants to be seen in flower any time during the next few weeks.—W. DALLIMORE.

APPLE SANSPAREIL.

New Apples of more than average merit are not very plentiful, consequently when one does come its exhibitor may count upon some considerable congratulation. Amongst the foremost of dessert Apples in the future must be placed *Sanspareil*, which was staged by Messrs. G. Bunyard & Co., Maidstone, at the Drill Hall on the 14th ult., when it received from the Fruit Committee a first-class certificate. In shape it is conical, broad at the base, and narrowing towards the crown; it is obtusely ribbed. It is rather above medium size, being 2½ inches in height, by 3 inches in width. The half open or closed eye is deeply set in a furrowed basin, and has erect blunt segments.

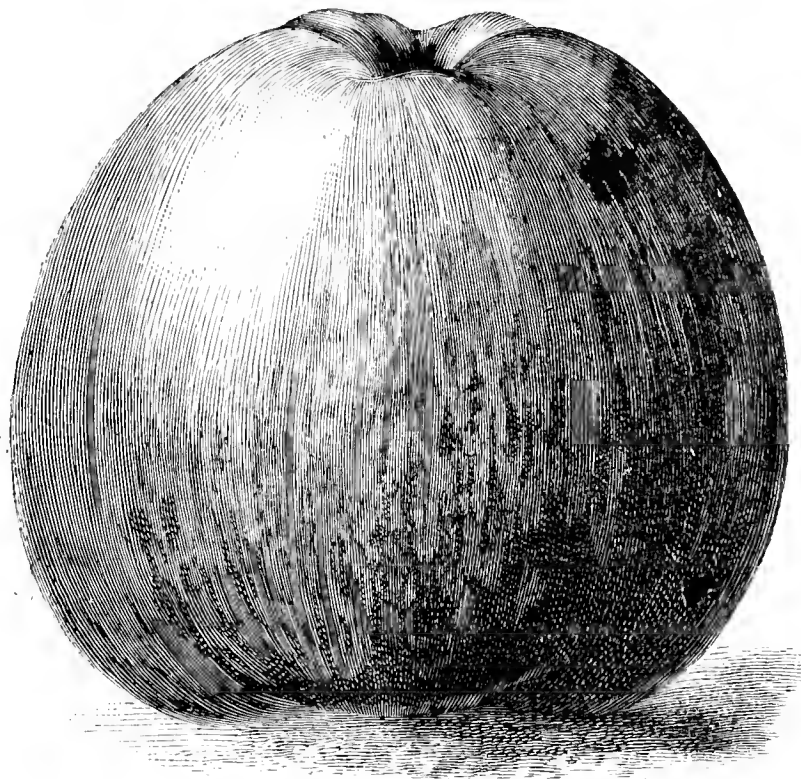


FIG. 52.—APPLE SANSPAREIL.

The thin stalk is deeply inserted in an even cavity, which is rayed with light brown russet. The colour is lemon-yellow with flushes of crimson, and splashes of brighter crimson on the side next the sun; it is strewn all over, but mostly on the shaded side, with brown pinhead spots. The cream-tinted flesh is tender, sugary, and of pleasant flavour. It is difficult to speak with confidence as to the keeping properties of Apples from Mr. Bunyard, as with this particular variety were staged several autumn Apples in perfect condition. *Sanspareil* is of continental origin.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—Present: Dr. Müller (in the chair); Rev. W. Wilks, Mr. Michael, Mr. A. Sutton, Mr. E. F. in Thurm, Rev. G. Henslow, Hon. Sec.

Celery, &c., attacked by grubs.—This was sent by Mrs. Barnet, of Bilton Hall, Rugby, and proved to be much infested by millepores (vegetable eaters) and centipedes (insectivorous), but not wireworm. The best remedy for these troublesome grubs is gas lime, or ordinary slaked lime (builders' second quality), well mixed and dug in. It may possibly injure the next year's crop to some extent.

Sweet Pea seed.—Mr. Sutton described specimens of the seed of certain varieties grown at Reading, remarkable for the skins becoming wrinkled like a Marrowfat Pea; while in one or two cases the Peas were so small that customers had thought they must be defective; whereas the smallest sorts really gave rise to plants bearing the largest and best type of flowers. In another variety the skin is invariably split. With none of these peculiarities, however, is there the slightest deterioration in the quality or character of the blossoms.

Shirley Poppy seed.—Mr. Wilks observed that the seeds of these Poppies are becoming of a pale grey colour, instead of being nearly black, as was originally the case with the old type of the cultivated *Papaver Rhæas* bearing black anthers.

Apple graft variation.—Mr. Wilks showed samples of the Mannington's Pearmain Apple sent by Mr. Peter Veitch, and taken from the original tree which supplied the fruit described by Dr. Hogg fifty years ago. It

is a medium sized Apple, russet in appearance, and rugose with raised lines, though the sample has scarcely a trace of bright colouration, as stated in Hogg's description. The "improved" form was devoid of all roughness, and brightly coloured with yellow and red. It is now widely distributed by grafting, and this improved form is the present recognised "Mannington," though widely different from the original type. Professor Bailey records an analogous case in America, in that since the original Newtown Pippin has been distributed over the United States, it has assumed various forms, specially characteristic of Apples growing in the different States, and even in Australia it has also acquired the local character of Apple.

THE YOUNG GARDENERS' DOMAIN.

A HOMILY.

It may be considered a happy thought that induced the *Journal* to afford a portion of its columns as a domain for young gardeners who felt inclined to profitably devote a portion of their spare hours to writing on gardening subjects. Really efficient horticultural writers are none too plentiful, and if the *Journal of Horticulture* is to fulfil its functions, and maintain and advance beyond its present level, it is necessary that young recruits should be induced to join the ranks.

In joining the colours young aspirants of the present ought to be considered better fitted to take the field than were those who are now putting off their armour. A sound elementary education has in their case been much more easily attained than it was when their forbears were young; and there is certainly a more numerous crop of subjects about which to write and discuss, and far more facilities for putting their writings into print.

Committing thoughts and observations to writing is to be strongly recommended for various reasons. It never fails to have a stimulating effect upon the mind of all who essay the attempt; it makes them more careful observers in the field of their daily labours. Observation or taking notice is one of the chief factors in evolving an accomplished cultivator. Writing of the value of this faculty, I think it was Dr. Johnson who said that some men learned more in the tour of Hampstead Heath than others learned in the tour of Europe. What a field of fertility in this respect does a modern garden establishment in its varied details afford. In few things does the proverb of "learn young learn fair" become more fully realised than in the early culture of the habits of carefully noticing, and in committing observations to writing.

Aspirants to horticultural honours would do well to be impressed with this fact. It is well known how strong is the general and natural tendency of youth to be so much absorbed in what may be termed the frivolities of life, as to lead him to perform his most interesting daily work without much serious thought, not questioning the whys and wherefores of what he is engaged in, or questioning the unerring natural laws of the marvellous organisms and their functions with which he is dealing and tending. His day of reckoning is, however, sure to come when it is too late to repair the negligence. But it is not my intention at present to pursue this phase of my subject any further, the able manner in which another "Old Boy" has dealt with such matters rendering it unnecessary.

Having been instrumental in my time of activity in inducing young men (some of whom have in no mean way graced these pages) to join the ranks of horticultural writers, I have taken an interest in the "Young Gardeners' Domain," and have followed it pretty closely. It may be said that some of the youthful writers give promise of good work for the literature of horticulture as well as in arduous work of the garden. I have, however, noticed with something like regret that they have almost entirely ignored the vegetable and hardy fruit departments, or at all events not taken so much notice of them as they deserve. Their subjects have, I think, been too exclusively taken from the glass department, no doubt one of great importance, and I do not profess to say that any section is much more important than another.

The kitchen department cannot be considered of little importance, or will it be thus regarded by those who, like myself, have been responsible for half a century for the satisfaction of those immaculately clad individuals who are at the head of the cooking department. It may be said without exaggeration that most gardeners have found the kitchen to be the quarter from which the most constant and exacting demands come all the year round.

I know from long experience that young men, entering their professional career, treat the cultivation of vegetables with far less consideration than they should do. They are constantly aspiring to the glass department long before they have become conversant with that for vegetables, or felt the importance of how to crop a kitchen garden in the most profitable way and so as to keep a supply in due proportion all the year round. With few exceptions it has been my rule to place all young

men who came under me first in the kitchen garden, and as a rule I found those who acquitted themselves well there turned out creditably in all departments. I never yet found a youth who was a good spademan who was not a good all-round workman, and a good workman generally turns out a good cultivator. If I were called upon to test a man by one operation I would hand him a spade and set him to dig, as I never found a good spademan in whom there was not a satisfactory general outcome.

I would urge upon those young men who aspire to enrich the "Young Gardeners' Domain" not to treat lightly with their pens the department for which I am pleading, and the importance of which they will sooner or later recognise. They may rest assured that it is a most important one, in which there is much to learn and interest. Its high-class management calls for much thought and forethought. There are these very few points among many:—The selection of the finest and most profitable sorts of vegetables; their sowing and planting times so as to maintain a constant supply in good condition; the rotation of crops; the best methods of culture; and the correct knowledge of the quantities of seeds necessary to crop a given acreage of ground for constant supply.—D. THOMSON.

VINE CULTURE.

It has long been my contention that it is not possible to lay down hard and fast lines on many points connected with Grape culture which would be universally applicable. Positions, structures, climate, and, in particular, soils, differ surprisingly, so that a method of treatment which answers well in one district might prove a failure in another. The object I have in view is to give a system of procedure such as by practical experience and careful observation I have found productive of successful results.

Before starting Vines into growth both structures and occupants must undergo a thorough cleansing. The borders may then be examined, and all surface soil removed down to where the roots are abundant. Replace this with a compost of four parts of good fibrous loam to one of mortar rubbish; charcoal, wood ashes, half-inch bones, and lime should be incorporated with the compost for top-dressing. It must then be made moderately firm and the borders adequately watered. I have often heard that if Vine borders are well drained they cannot be overwatered during the growing season. In my opinion, however, such an assertion is an error and often leads to unsatisfactory results. I believe many Vines are ruined by excessive watering, as some soils have a greater capacity for holding moisture than others. When admitting air to vineries one cannot be too careful, as a cold draught during the early stage of growth will practically ruin the future crop. We have to be guided in a great measure by the weather, and one important item is to change our ventilator just as often as the weather changes.

When starting Vines into growth no artificial heat will be required for three weeks, but the Vines must be syringed and the houses kept close. As the growth advances gradually raise the temperature to 50° or 55° at night, with 5° to 10° more during the day with air. Close early as the sun leaves the houses, but admit a little air during the night, as this will insure a sturdy growth and maintain a healthy atmosphere in the house.

In disbudding remove the weakest growths, leaving not more than two at each spur, and should these be close together leave the one showing the better bunch. When the shoots get near the glass carefully draw down to the wires. I do not consider it advisable to have either wood or foliage particularly large, but it is essential that both be healthy, of good colour and substance. Each leaf must be allowed sufficient space to develop without crushing its neighbour.

As the flowering season approaches gradually raise the temperature from 5° to 10°. Remove all surplus bunches, and admit as much air as possible without causing a draught; dispense with syringing altogether, and keep the atmosphere somewhat drier. Give the Vines a gentle shake a few times during the day to disperse pollen.—J. F. D., *Yorks.*

(To be continued.)

EARLY PEACHES AND NECTARINES.

PREVIOUS to starting a house, all necessary operations should be done after the foliage has fallen from the trees, such as washing the glass and woodwork, pruning, scaling, painting the trees with Gishurst compound, tying and top dressing the border if required. In tying always keep the fruiting wood on the top as much as possible, so that it may get the full benefit of the sun. If the borders require top-dressing, remove the surface soil down to the roots, taking great care not to break any; and if dry, give a watering, after which apply a mixture of good maiden loam and old mortar rubble, using four parts of the former to one of the latter; do not add it too heavily, and make it fairly firm by beating with a fork.

If fruits are required to be ripe by the middle of April and the beginning of May, start the house at the middle of December, affording a temperature of 40° to 45° at night, 45° to 50° by day artificially, allowing a rise of 5° from sun heat. Syringe the trees lightly with tepid water on bright days in the morning when the thermometer has reached 55°, also at midday, but in dull weather damping the paths and border will be sufficient. In about a fortnight from the time the house was started, raise the temperature 5° both for night and day. Great care must be taken in ventilating; do not admit any air until the house has a temperature of 55°, closing again at midday, allowing a rise of 10° from sun heat. Examine the borders occasionally to see if they require water; if so, apply it forthwith, for if permitted to become dry it will cause the

buds to fall; but on no account overdo it and make the borders sodden. Protect the outside border from frosts, snow and rains, covering it with straw or leaves, not too thickly, otherwise it will ferment, which will do the trees injury; place wooden shutters or strips of galvanised iron on the top of it.

When the buds are swelling raise the temperature again 5° both night and day, and if any aphids are perceived fumigate with XL. All vaporiser. Discontinue syringing when the buds are showing colour, but damp the border and paths two or three times on bright days. When the flowers expand brush them over at midday with a rabbit's tail fastened to a stick, to distribute the pollen, so as to insure a good crop, and when doing so keep up a free circulation of air in the house. After the fruits are set and beginning to swell, the trees should be syringed again, morning and at midday, charging the evaporating troughs with weak liquid cow manure, and raise the heat to 55° to 60° at night, 60° to 65° by day. Attend to the disbudding and thinning, removing a little at a time and often, because removing in great quantities will arrest root action and cause a check to the trees. At this stage when watering sprinkle some artificial manure on the borders, so that it may be washed in, and use soft water, as this will benefit the trees during the swelling of the fruit. Lay in the growths which are intended to fruit the following season, tying them very loosely, and remove laterals. Do not force the fruits too much when stoning, for if subjected to a high temperature it will cause them to drop. When stoning is completed the temperature may be again increased. Use the syringe frequently to keep red spider, thrips, and black fly at bay.

As the fruits begin to show colour, turn them up to the glass to get the full benefit of the sun, and remove all foliage from them, keeping in that position by placing them on labels or pieces of lath tied to the trellis, and afford a temperature of 65° to 70° at night, 70° to 75° by day. With signs of ripening discontinue syringing, but well damp the paths and border on sunny days, and afford a little air at night to improve the flavour. Look over them twice daily and gather those that are fit, and if not required to be used forthwith, they will keep for some considerable time if stored in a fruit room. After the fruits are gathered, the trees should be pruned, leaving the growths that are to fruit the following season about 3 inches apart, and on the top side of the branch if possible. Again syringe the trees two or three times daily, taking care to wet every part thoroughly each time it is done, and give plenty of air on all favourable occasions. Do not let the borders lack moisture, and when watering, it will be found beneficial to the trees if a little lime is sprinkled on and washed in.

The following varieties are suitable for early use: Alexander, Waterloo, Early Beatrice, Hale's Early, and Royal George Peaches, with Cardinal, Early Rivers, Lord Napier, and Violette Hâtive Nectarines.—P. R.



FRUIT FORCING.

Melons.—The earliest plants in houses are now well advanced, and if stopped when they have extended about two-thirds across the trellis laterals follow, with fruit showing at the second or third joint. To insure a good and prompt set of fruit afford a bottom heat of 80° to 85° , and sufficient water only at the roots to prevent flagging. This will arrest growth, and in combination with a rather dry atmosphere, a circulation of warm air passing through the house will favour the production of pollen. When this is ripe, fertilise the pistillate blossoms as they expand every day, and stop the shoots at the same time one joint beyond them. When the fruits commence swelling earth-up the roots by placing warm soil against the sides of the ridges or hillocks. Apply water as required, but avoid a soddened condition of the soil, duly maintaining moisture by sprinkling the paths in the morning and evening, and syringing lightly at closing time in bright weather. If a succession of fruit is required in the same house, deprive some of the plants of the flowers that appear on the first laterals. Stopping those at the first joint will cause the sub-laterals to show fruit, which will be later and finer, owing to the increased vigour of the plants.

Vines.—*Fruiting Vines in Pots.*—Those started early in last November will now have the fruit stoned and taking the last swelling. Surface-dress the pots with rich material and feed with liquid manure. When the Grapes are evenly coloured supply pure water only, and just enough to preserve the foliage fresh and the fruit plump.

Early Houses.—The Vines have, as a rule, made satisfactory progress, but there are cases in which the Vines have started slowly and broken irregularly, a few bunches showing a tendency to blindness, and others twisting and twining in any but the right direction. In such instances a slight increase of temperature and a reduced supply of moisture for a short time may be beneficial. Thinning the berries should be kept well in hand, commencing as soon as those likely to swell freely can be detected, and as a rule thin well in the interior of the bunches, leaving the berries with room to attain their full size without wedging, and yet so full as not to fall out of shape when placed on a dish. Liquid manure applied to inside borders will materially assist the swelling of the Grapes

after thinning, but it is best to vary the diet, giving a top-dressing of some approved fertiliser about every three weeks.

A liberal supply of atmospheric moisture is also necessary, and, if moderately charged with ammonia, it is beneficial to the Vines and inimical to red spider. It may be secured by sprinkling the border and paths with guano water, 1 lb. to twenty gallons of water occasionally, or better still, supply a mulch of sweetened horse droppings a little at a time over the whole border, but too much at once will prejudicially affect the foliage. Sharp winds necessitate care in ventilating, so as to avoid sudden changes of temperature and moisture, and thus crippled foliage and rusted Grapes may be avoided. Air should be admitted with great care in such weather, closing early in the afternoon at 85° , allowing an advance of 5° , and from that point the temperature should gradually fall to 65° at night. During the daytime the heat should be maintained at 70° to 75° when the sky is overcast.

Grapes that have passed the stoning process ought to have copious supplies of liquid manure in a tepid state. Avoid the close stopping system until the trellis is evenly covered with foliage, as every leaf promotes root action and assimilates food, which it is necessary respectively to maintain active and as clean as possible for securing properly swelled berries, but remember that this also depends on the full exposure of every leaf to the light, therefore avoid the least tendency to overcrowding.

Succession Houses.—Disbud and secure the growths as they advance, stopping them two joints beyond the bunch where the space is limited, but where there is room allow a greater extension before stopping. Remove the laterals from the joints below the show of fruit, except from the two basal leaves, which may be stopped at the first leaf, and to one afterwards as produced. The laterals above the fruit may be allowed to make such growths as can have exposure to light without crowding, and then be stopped, keeping them closely pinched afterwards, as well as in the case of those having room for extension. Remove all superfluous and ill-formed bunches of the free setting varieties as soon as those most promising for the crop can be determined.

Vines started at the beginning of the year will be in flower. A rather dry atmosphere, with a free circulation of air, and a temperature of 65° to 70° at night, and 70° to 75° by day, are conducive to a good set, moderate moisture being maintained by damping the house two or three times a day in bright weather. Any shy setting varieties, such as Muscats, should be kept 5° higher, the flowers being carefully fertilised, taking pollen for the purpose from those varieties that afford it plentifully, such as Black Hamburgh, Foster's Seedling, and others.

Late Houses.—Start the Vines intended to afford fruit from August onwards—indeed, Muscats, Alicante, Lady Downe's, and other late sorts should be encouraged now, as the fruit keeps much better when ripened early in September than when the season is more advanced at the ripening period. Gros Colman and Gros Guillaume require a long period of growth, hence start them without delay. Inside borders should be brought into a thoroughly moist condition, but avoid needless watering, as it only tends to retard root action, and in many cases causes the smaller fibres to decay, and shanking is the consequence. The outside borders are not benefited by protective material after this, but care should be taken to keep the stems of any Vines that are planted outside well wrapped in hay-bands. The atmosphere will be kept sufficiently moist by damping floors and walls two or three times a day— 50° is a proper night temperature, and 65° by day with sun. Depress any young canes to the horizontal line or lower, so as to insure their starting the buds evenly throughout their entire length. In the case of late Black Hamburghs the Vines may be kept cool, and they will then start naturally next month.

THE KITCHEN GARDEN.

Jerusalem Artichokes.—The weight and quality of crop is greatly improved when this vegetable gets fair play. Instead of being allowed to come up thickly on the same site year after year, fresh plantations should be made each season. A deep, well manured freely worked soil best suits this crop. Open drills about 6 inches deep and 3 feet apart. In these plant either medium sized whole sets with the first strong shoot intact, or cut large tubers into two or three sets, each with two or three shoots or eyes, disposing them 1 foot apart. In all other respects treat similarly to Potatoes. The old plantation should be dug over, every tuber found thrown out, and all worth saving for use during the next week be cleared of sprouts and stored in sand or soil till wanted.

Early Carrots.—Only the smaller early varieties of Carrots should be sown as yet: early sowing of the intermediate and longer rooted sorts resulting in the production of coarse, deformed roots, unfit for storing. A small portion of a warm border or slope may well be devoted to early Carrots, and this should be got into as finely divided a condition as possible, adding to the heavier soils a dressing of sand or sandy soil, forking, not digging, this in and mixing it with the surface soil. Draw shallow drills 9 inches apart, sow the seeds regularly and not too thickly and cover with fine soil.

Chicory.—Large Carrot-like roots produce the finest tufts of leaves when forced, and in order to procure these a fairly long period of growth must be allowed. If the ground was well manured for a preceding crop of any kind, all the farther preparation is deep digging, followed by making the soil fine to a good depth. Shallow drills should be drawn 1 foot apart, the seeds sown thinly and covered with fine soil. The seeds being small and cheap are frequently sown thickly, with the result that nearly or quite all grows, and much thinning out is needed accordingly.

Onions.—Directly the ground can be got into a suitable condition, the seeds ought to be sown. If the ground has been previously heavily manured, dug deeply, and, if of a heavy nature, laid up roughly, it may be

found an easy matter to break it into small particles. Should it be hard and tough, March winds and sun, followed by rain or an application of water, ought to cause it to crumble readily, and better wait for this than to bury seeds in rough lumpy soil. Firmness, as well as a rich root run, is necessary for Onions. The poorer, lighter soils could be greatly improved by a surfacing of soot, 1 peck to the square rod, common or manure salt 2 lbs. to the square rod, and a liberal dressing of sharp road grit, stirring this into the surface. Trample the ground heavily, make all fine and level, and draw shallow drills 10 to 12 inches apart. Sow the seeds thinly, make firm, and finish by raking across the bed. Autumn sown Onions may be transplanted now or a little later, and if the work is done in mild or showery weather, the plants will experience very little check in transplanting.

Parsnips.—Parsnip seeds are usually sown in February or as early in March as the ground can be got into a suitable condition. This plan may be followed with advantage by those who require extra large roots, but medium-sized to small roots are the best from a cook's point of view, and later in March, or even early in April is, as a rule, a better time to sow. Parsnips ought to have a deeply cultivated soil, and if any manure is used this must be buried deeply, as should the tap roots come into contact with solid manure they are liable to fork badly. Sow the seeds thinly in shallow drills drawn 12 inches to 15 inches apart.

Salsafy and Scorzonera.—Much that was advanced concerning Parsnips also applies to these. Early sowing is also apt to result in many of the plants running to seed prematurely, and the roots are worthless accordingly.

Potatoes.—Advantage should be taken of a dry time for making a start with Potato planting. If, however, the ground is wet underneath, wait till it is drier and can be moved readily, the best crops resulting on soil that has been freely and deeply cultivated. Only the latest sorts should be planted on a large scale at this early date, but a few rows of early varieties may be planted in a warm position, or where a close look-out can be kept, and all the haulm that pushes through be protected when necessary. Sprouted sets are the quickest to grow and produce crops, and in planting care should be taken not to break these sprouts. Seeing that short-topped early maturing varieties are not long on the ground, they may be planted somewhat thickly, or say in lines 20 inches apart, and the sets 9 inches asunder in the drills.

THE BEE-KEEPER.

REDUCING ENTRANCES.

HIVES that have had their entrances open the full width throughout the winter may now have them reduced. There are several reasons why this should be done. In the first place robbing is often prevalent at this season. The strong stocks will attack a weak colony if the weather is warm. Abundance of stores in each of the hives has very little to do with the matter, as we have proved during the recent bright sunny days. The steps taken to prevent it may be interesting to others similarly situated.

On two or three successive days a great commotion was observed round the entrance of one of our hives which was doubled last summer, but owing to the prevalence of honeydew the honey was not removed from the top storey. The excluder zinc, however, had been removed, so that the queen and the bees had free access to all the combs. The entrances were all opened their full width last autumn, so there was no difference in that respect. On examination we found the rightful owners clustered in the top storey. We at once took steps to prevent the bees from the other hives gaining admittance. The entrance was reduced, allowing only sufficient space for one bee to pass through at one time, and turned from south to west. The sides of the hive and the alighting board were painted with a strong solution of carbolic acid. The steps taken had the desired effect, as when the bees from the other stocks attempted to gain an entrance they were stopped, and after a few hours' excitement gradually returned to their hives.

At first we were somewhat puzzled to know why the above stock should be attacked, as it was strong in bees, but have concluded that it was owing to the majority of the bees being in the top storey amidst ample stores, and they neglected to guard the entrance. The robbers were thus able to gain admittance, and would doubtless clear out the stores that remained in the combs in the body of the hive. The above shows it is an advantage to reduce all entrances to at least an inch at this season as a precaution against robbers; while it will maintain a higher temperature in the hive.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. Clibran & Son, Altrincham.—*Farm Seeds.*
W. Cutbush & Son, Highgate.—*Dahlias, Roses, Fruit Trees, Hardy Plants.*
Harrison & Sons, Leicester.—*Farm Seeds.*
Kent & Brydon, Darlington.—*Farm Seeds.*
J. Veitch & Sons, Ltd., Chelsea.—*Farm Seeds.*
T. S. Ware, Ltd., Tottenham.—*Perennials.*

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Seakale after Forcing (Mack).—Seakale that has been taken up and forced in a Mushroom house or similar place will do to grow for stock, provided the plants are not very old, say not more than four years. We place the roots as the heads are cut in sand in an outhouse or shed, keep them cool until the beginning of April, and then plant in rows 18 inches apart, and place the plants about 1 foot asunder in the rows. As many growths issue from the crown of each set or plant, they should be reduced to two, or at most three, removing the smallest and leaving the most promising. They may again be forced the following winter, and so on.

Violet Leaves Disfigured (C. T.).—The leaves are infested by the Violet spot fungus, *Peronospora Viola*, which has been unusually prevalent this season. It chiefly arises from a humid atmosphere, and we can only suggest giving more air, and not having the plants very closely together, so that air can circulate freely about and through them. This, and removing the first spotted leaves, we have found the best preventive, also using dust charcoal freely about the plants. In bad cases it affects the flowering to such extent that they do not expand freely and fully—indeed, some never do more than form buds, the flowers being "blind," or nearly, if not quite, devoid of petals. The shrub appears to be the very handsome Californian Hemlock Spruce, *Tsuga Mertensiana*, syn. *Abies Albertiana*.

Eradicating Wild Garlic (J. M.).—In some woods, especially in hilly districts, this plant (*Allium ursinum*) grows abundantly, and often in patches of many acres, and is, as you say, very rank and disagreeable smelling, and "if eaten by cows the taint will be present in the milk." We may add in the butter, which it makes so bad tasted that we could never use it. Of course, cows ought not to be allowed in woods, but the fences of these kept in good repair. We have not found anything act so well as cutting the plants down with a scythe just before flowering. We used a short scythe, and where this was impracticable a scythe sickle, cutting as near the ground as possible. By repeating this every year the Broad-leaved Garlic gradually disappeared. Of course, rooting up is the better plan, but a serious affair in the case of large areas. Perhaps some of our readers may know of a readier means of extirpating this noxious smelling weed.

Non-Success with Mushrooms (C. P. S.).—The failure cannot be attributed to the beds being made on the cemented floor, for we have grown Mushrooms on such bases quite as well or better than on shelf beds. We prefer these for convenience, keeping the floor clear, as you say, but only to the extent of a pathway up the centre or at one side, using the bottom beneath the shelves for forcing Rhubarb and Seakale. Slate or stone shelves are the best, supported in brick walls or brick pillars with T galvanised iron bearers. The fronts may be of wood, the board a foot deep, and kept in place by uprights, if fitting on the inside and resting on the shelf. The shelves may be entirely of wood, forming boxes about a foot deep. There should not be less than 3 feet between, so as to allow for the formation and attending to them with ease, and the boards must be $1\frac{1}{2}$ to $1\frac{3}{4}$ thick to bear the weight without much sagging. An inch board will do for the sides. The "brick" may be all right as regards spawn, but it neither smelt of Mushrooms, nor could we find life in it. The spawn appears to have been dried out of that—the portion sent being very old. The bricks cannot be too fresh, and if it be good you will succeed as you have done before under proper management.

Definition of a Professional Gardener (Coventry).—Yes, "a gentleman's gardener is a professional gardener where there is no other gardener employed," and must rank as such for every purpose—duty or annual licence, and competing at horticultural shows. The term professional, however, has no more than a relative significance, for gardening is not a profession, but an occupation, and applies to any and every "one whose occupation is to make, tend, and dress a garden." Where but one person is so employed, he or she is called a *single-handed gardener*; if more than one, there arise the terms *head* and *under* gardeners. When a person works his own garden, he is an amateur gardener.

Eggs on Apple Twig (C. C. E.).—The reddish minute knobs appear to us nothing more than russety excrescences, possibly due to a minute fungus of which we find the perithecia-like bodies, but there does not appear any substance in them, or at least nothing that we can define as either vegetable or animal organisms. The few black eggs in the crevices are those of the Apple aphid or fly, *Aphis malus*. There may be other bodies, but we failed to discover them. Nothing of which we are aware will destroy the aphid eggs but hot water, though caustic soda and commercial potash have been used with good effect, the solution being sprayed on at a temperature of 130° to 140°. One ounce each to a gallon of water is a proper strength. The solution must be used whilst the trees are quite dormant.

Silk Cocoon Liquid Manure (W. R.).—We are not aware of the article being now in commerce, but there can be no question of its efficacy for destroying mildew, as the cocoons are boiled for unwinding the silk in a copper vessel heated by charcoal, and the water thus more or less impregnated with copper and containing the gummy matter of the cocoons imparts an adherent consistence to the liquid. Perhaps a letter addressed to the Manager of the Lister Silk Mills, Manningham, Bradford, Yorks, would result in your obtaining the necessary information. We, however, have no personal experience of the article, but the gentleman mentioned in the article on "Grape Vine Mildew" in the *Journal of Horticulture*, December 21st, 1876, is a guarantee of its safety and efficacy for destroying mildew on Roses.

Treatment of Vine for Introducing to House (C. C.).—The Vine should be pruned to one or two buds of last year's wood, selecting the best of the three shoots for this purpose, preferably the central one, and cutting the other two away close to the cane or stem. The wounds should be carefully dressed with patent knotting or styptic to prevent bleeding. We presume the Vine has been planted out in the position it is to occupy. If not, it would be advisable to do so as soon as the weather becomes mild, spreading out the roots carefully, and not planting much deeper than it has been before. It will, or ought, to break strongly from the two buds left, and when they are fairly in growth remove the least promising, and secure the other to a stake, pinching the laterals to one leaf, and you will secure a strong cane, which may be introduced into the house when long enough, and preferably as soon as convenient, so as to secure well ripened wood.

Manure for Narcissi and Daffodils (A. L.).—Of animal fertilisers the best for a light soil is cow manure well decayed, for a "sandy clay" farmyard, and for clay land horse droppings. The two latter also should be well decomposed, as fresh has a tendency to "flush" the bulbs into too much leaf. We do not know in what way Narcissi can be injured by the ammonia of horse manure, unless it were used fresh. We have used sweetened horse droppings as a mulch over Narcissi beds with satisfactory results, the whole family growing in places where they get a rich surfacing of vegetable mould, and thriving accordingly. Of course it is not fresh, but results from decaying vegetable matter; therefore use the manure well decayed. For *Lilium candidum* and *L. speciosum* (lancifolium) album, we have not found any better manure than that of cows for light soil, as it is cooler and more moisture holding than horse droppings, the two mixed for medium textured soil, and horse alone for heavy land.

Pruning Dwarf Hybrid Perpetual Roses (H.).—There are always different opinions about pruning Roses, simply because those having them have different objects in view. The gardener no doubt had that of fine blooms with stout stems for cutting purposes, and keeping the bushes dwarf, strong, and healthy as long as possible, hence his advice to prune the weak wood to two or three eyes and the strong to four or five. Our practice nearly approximates to this, but we cut away all the weak wood, as it never flowers or the blooms are poor. The healthy but weak shoots are cut back to a bud of their base, the medium or moderately strong to two or three buds, and the strong to four to six eyes. This is the practice we have followed for many years, and found satisfactory, our object being to secure good trusses of flowers for cutting and fine blooms for specimen glasses. The pruning is best deferred until the end of March or beginning of April, or even later, as the young growths at the extremities of the shoots attract the sap and induce root action without starting the basal buds, and thus kept back they start strongly when the bushes are pruned and the growths from them escape the late spring frosts. The other plan you mention has for its object the production of what are called garden Roses, or an abundance of flowers, and against it we offer no objection, provided the trees grow sufficiently vigorous each year to produce strong shoots and ripen them. By the long pruning system the old wood must be cut out when it becomes weak in order to secure strong growth. In some cases the shoots are left almost entire, only the unripe tips being cut off, and the shoots are sometimes pegged down.

Names of Plants (C. D., Kent).—*Allium neapolitanum* (T. H. B. and J. P.).—Not yet identified, see next issue. (L.).—Through having been packed in cotton wool the flower was quite dead and no one could possibly identify it. Send another properly packed, and we will do our best to assist you.

COVENT GARDEN MARKET.—MARCH 8TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Cobs ...	30	0	St. Michael's Pines, each	2	6 to 5
Grapes, lb. ...	1	6			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0	Onions, bushel ...	3	6 to 4
Beet, Red, doz. ...	1	0	Parsley, doz. bnchs. ...	2	0 to 3
Carrots, bunch ...	0	3 to 0	Parsnips, doz. ...	1	0 to 0
Cauliflowers, doz. ...	2	0 to 3	Potatoes, cwt. ...	2	0 to 4
Celery, bundle ...	1	0	Salsafy, bundle ...	1	0 to 0
Coleworts, doz. bnchs. ...	2	0 to 4	Scorzonera, bundle ...	1	6 to 0
Cucumbers ...	0	4 to 0	Seakale, basket ...	1	6 to 1
Endive, doz. ...	1	3 to 1	Shallots, lb. ...	0	3 to 0
Herbs, bunch ...	0	3 to 0	Spinach, pad ...	0	0 to 0
Leeks, bunch ...	0	2 to 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 to 1
Lettuce, doz. ...	1	3 to 0	Tomatoes, lb. ...	0	4 to 0
Mushrooms, lb. ...	0	6 to 0	Turnips, bunch ...	0	3 to 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3	0 to 4	Lily of the Valley, 12 sprays	0	6 to 1
Asparagus, Fern, bunch ...	2	0 to 2	Marguerites, doz. bnchs.	4	0 to 5
Azalea, white, doz. bnchs.	3	0 to 4	Maidenhair Fern, doz.		
Bouvardias, bunch ...	0	4 to 0	bnchs. ...	6	0 to 8
Carnations, 12 blooms ...	1	6 to 3	Narcissus, doz. bnchs. ...	1	0 to 2
Daffodils, single yellow, beh. 12 blooms ...	0	6 to 1	Orchids, var., doz. blooms	1	6 to 9
Daffodils, double, bunches ...	0	4 to 0	Pelargoniums, doz. bnchs.	6	0 to 10
Eucharis, doz. ...	2	0 to 3	Roses (indoor), doz. ...	2	0 to 3
Freesia, doz. bnchs. ...	2	0 to 4	„ Red, doz. ...	6	0 to 8
Gardenias, doz. ...	4	0 to 6	„ Tea, white, doz. ...	2	0 to 3
Geranium, scarlet, doz. bnchs. ...	6	0 to 8	„ Yellow, doz. (Perles)	2	0 to 3
Hyacinths, Roman, bunch	0	6 to 0	„ Safrano, doz. ...	2	0 to 2
Lilium lancifolium, white	0	0 to 0	Smilax, bunch ...	2	0 to 3
„ longiflorum, 12 blooms	4	0 to 6	Tulips, bunch ...	0	6 to 1
Lilac, bunch ...	3	0 to 4	Violets doz. bunches ...	0	6 to 1
			„ Parme, bunch ...	2	6 to 3

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0 to 36	Foliage plants, var., each	1	0 to 5
Aspidistra, specimen ...	5	0 to 10	Lilium Harrisii, doz. ...	24	0 to 36
Crotons, doz. ...	18	0 to 24	Lycopodiums, doz. ...	3	0 to 4
Dracæna, var., doz. ...	12	0 to 30	Marguerite Daisy, doz. ...	6	0 to 8
Dracæna viridis, doz. ...	9	0 to 18	Myrtles, doz. ...	6	0 to 9
Erica various, doz. ...	9	0 to 24	Palms, in var., each ...	1	0 to 15
Euonymus, var., doz. ...	6	0 to 18	„ specimens ...	21	0 to 63
Evergreens, var., doz. ...	4	0 to 18	Pelargoniums, scarlet, doz.	8	0 to 12
Ferns, var., doz. ...	4	0 to 18	Solanums, doz. ...	6	0 to 12
„ small, 100 ...	4	0 to 8			



HORSES FOR PLEASURE AND PROFIT.

IN these days of darkness and depression (agriculturally speaking)—a darkness that may be felt—it is a serious question as to what industry will make any return to the farmer. So much is labour in vain, and worse than that, so much of enterprise spells "loss." Indeed, it may be accepted as a fact that no old-fashioned plans are of any avail, each farmer must have some speciality—something over and above his ordinary routine work. Only one string to the bow, or all eggs in one basket, will never answer, and the question must be decided by each individual as to what outside branch or "extra" the farm and the man are best fitted for.

Every man by birth and education has a bias; that bias must be turned to account. As a general rule, it will be found that Yorkshire men have kept in the same groove for generations, and that the groove is a good and profitable one has been fully proved by the success which has attended their efforts in that direction. We refer to the breeding of light horses. In old days, say the time of our grandfathers, it was a case of coach horses. Now hunters and harness horses generally have come to the fore.

Happily no substitute has been, or can be, found for a weight-carrying hunter, and he may safely breed carriage horses for some

time yet, despite the new invention. Remounts, too, are always in request for our soldiers, and should a war break out horses might soon reach famine prices. As long as England exists the sport of kings and commoners alike will demand good horses, and plenty of them. This open season particularly impresses an observer with the fact that a very brisk trade may be done by the fortunate possessor of a few sound horses. Here we are in February, only one week's rest all the season, horses fairly "dished" all round, such difficulty in getting a sound mount, and such racing and chasing if it is known anyone has a horse on sale; and the class of people who need them are both able and willing to give a long price.

"In all work there is profit," and if with the profit you can combine a little pleasure so much the better, and in the "making" of a hunter you get the chance of many a nice little day after hounds. In breeding hunters the first consideration is yourself. However pretty and good a thing is, if it will not meet a market it is of no use to you. Find out what is wanted, and breed to order. The majority of customers expect to have the eye filled, and to get plenty for their money, and so to cater for these "gents" you may safely dispense with much blood. Have some good earl mares, not big enough or fashionable enough to breed "Shires," mate them with a thoroughbred horse, sound all round, standing about 15'3, of proper action and substance. It is said a good horse cannot be a bad colour, but there always will exist a prejudice about colour, and so the sire should for choice be brown or bay with black legs. In all probability the fee will not exceed £2 2s. per mare—most owners, however, make material reduction in case of numbers.

The mares should be gently worked up to the day of foaling. Avoid potato leading in autumn, and manure filling in very soft weather, also see that the waggoners are not ruffians either in or out of the stable. After foaling keep the mares up for ten days or rather more. Then begin light work again. The foals are better left at home in boxes; they get a bit of corn, and are safer from accidents. When weaning time comes, submit each foal to a searching scrutiny, and at any price get rid of such as may show signs of bog spavin, ring bone, crooked legs, or curby hocks.

When three years old any colt that looks like harness can easily find a market (unbroken) at prices ranging from £40 to £80. The £80 ones will be even movers, of good colour, 15'3 to 16 hands high.

The question may be asked, Why sell them unbroken? In the first place no great buyer of carriage horses will ever look at a horse that has gone through any form of discipline except in the hands of his own breaker. A bad fault or two takes so much eradicating that the game is not worth the candle. Breaking is a heaven-born gift. Secondly, in breaking a young horse, a certain amount of risk must be run, and rather than spoil the whole thing for the sake of a few extra pounds, let someone else take the chance.

The less attractive colts and some of the fillies find a market as soldiers' mounts, or, maybe, go to horse some of the innumerable provision carts that over-run the country. Others find a sphere on the farm where a light horse is of the greatest service; he steps away and gets over the ground in a manner truly surprising, and is ready at a pinch to take master to market or missus to a tea party.

When rising 4, the pick of the bunch should be regularly ridden round the farm all the winter, and allowed to see hounds as often as practicable. Do not knock them about. Remember, now is the time when you are spending that extra 2d. per week for manners. No one likes an ill-mannered, fretful horse. Put them at small places, and never let them refuse. Let your watchword be, "Eternal patience." Be content with short days, and in keeping your own temper you make theirs. There are plenty of knowing men always on the out-look; they want them for show purposes, and, eventually, they get into the hands of rich buyers, who do not grudge to give £200 to £400. Personal recollection points to fifteen or twenty animals that have fulfilled these conditions out of cart mares by thoroughbred horses. We can remember one mare in the long ago, bred on these lines, who, with her foals, cleared every board, and that year after year.

These horses just suit the average hunting man—he thinks he is getting plenty of bone and muscle for his money—they are easy to ride, and not too keen. They never look so well as they do at four years old, and even if it is by accident a case of "bellows to mend," they are cheap in the shafts at from £40 to £60.

A man may be a good breeder of hunters but not a good man to hounds; therefore, in that case he cannot expect to make so much as a man who with a good seat and superb hands would almost sell a donkey. If he is known as a reliable man, he need never have a horse hang long, but he cannot expect to make the fancy prices that the latter man may, and can, command.

We do not argue for a moment that horses of this type are ideal hunters, but they are selling ones, and that is the great point we are looking at. The longer the pedigree the greater the risk. First-rate hunters must have at least six or seven distinct crosses, or be absolutely out and out thoroughbred. Mares of this class are bad to find, and almost beyond the purse of the ordinary farmer, and it will only be by very good luck that three brood mares will provide the owner with two saleable four-year-olds every season.

Blood horses, too, take much more training than the commoner ones, and are not at their best till six or seven years old. This means too long a wait before there are any returns, and few farmers can give so much credit.

WORK ON THE HOME FARM.

With March winds come dry seed beds, and given a properly pulverised soil, the sooner spring corn is in the better. In nine cases out of ten, or even nineteen out of twenty, it is the early sown seed that makes the heaviest bulk and the best sample. But let it be understood that when we say a "well prepared seed bed" we mean it. No sodden stiff land will do; a free fine mould, like a bit of real good garden, and this is generally attainable the second week in March.

Keep the land ploughed up close to the sheep; there is nothing like being "torrad" with work, and besides, the sheep manure does more good to the land by being well "happened" up.

If Wheats incline to be thick, nothing beats a good harrowing, that is if the state of the land allow of it being worked. Harrowing is like pruning Roses or thinning Grapes—it is hardly possible to overdo it. It is the natural habit of Wheat to branch, and a harrowing permits freer access of air and sunshine.

The lambing shepherd is much in evidence just now, and a good man finds his work no sinecure. There are always ewes whose supply of milk is deficient, and lambs soon succumb to cold, stormy weather unless they have a well filled stomach. A good cow is of infinite help to a shepherd, and he must be prepared to supplement with a sucking-bottle the maternal supply.

A generous diet for weakly ewes and ewes with pairs is advisable. In very rough weather all will be the better for a few extras, say a mixture of oats, cotton cake, and malt culms. We hear people talk of "luck" in lambing; well, the "luck," good or ill, is the result of judicious or injudicious management. We do not believe in "luck." We make our own.

METEOROLOGICAL OBSERVATIONS.

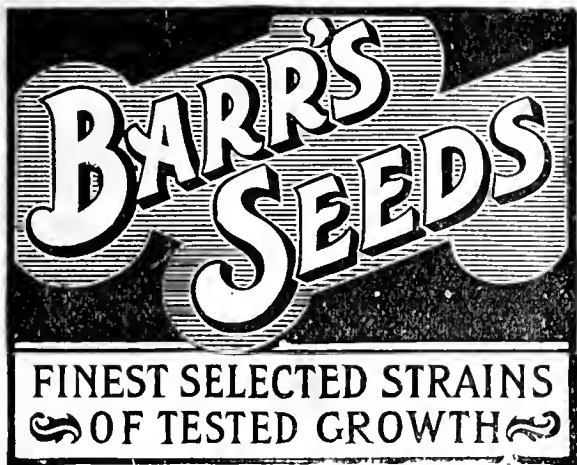
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. February and March.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.		
Sunday 26	30.399	32.0	31.1	N.E.	38.0	43.8	25.2	64.3	22.8	—	
Monday 27	30.527	30.4	29.9	N.E.	36.9	42.9	24.9	65.7	22.2	—	
Tuesday 28	30.718	27.4	27.4	Calm.	36.3	46.1	25.3	69.1	23.7	—	
Wednesday .. 1	30.674	35.9	32.4	W.	36.1	53.2	27.3	69.8	24.9	—	
Thursday .. 2	30.507	34.2	32.8	S.W.	36.0	49.4	30.3	83.1	26.4	—	
Friday 3	30.231	36.1	35.0	S.W.	36.3	50.6	29.9	72.8	26.9	—	
Saturday.... 4	29.878	35.9	34.9	W.	37.0	49.2	31.2	83.8	27.1	0.010	
	30.419	33.1	31.9		36.7	47.9	27.7	72.7	24.9	0.010	

REMARKS.

26th.—Almost cloudless throughout.
27th.—Sunny, but generally rather hazy, and fog at night.
28th.—Fog all morning, bright sun in afternoon, clear night.
1st.—Cloudy morning, sunny afternoon with halo, much milder.
2nd.—Bright sunshine throughout.
3rd.—Fog nearly all morning, bright afternoon.
4th.—Overcast till 10.15 A.M., then generally sunny morning, spots of rain at 1.15 P.M., and shower about 3.30 P.M., then sun again.
A cold, dry week, generally sunny, with clear frosty nights. Barometer very high on the 28th.—G. J. SYMONS.



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Journal of Horticulture.

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PREPARATIONS FOR BEDDING.

THOUGH summer bedding in many establishments is not the business it used to be, still it is a matter of more than passing importance, and unhappy is the gardener who finds himself at planting time destitute of material to meet the requirements. Better, then, to take advantage of every facility afforded by the propagating house while there is yet time to raise and increase.

In spite of the many hard things said about the Zonal Pelargonium as a bedding plant it still holds a prominent position in many gardens, where it is the aim of the grower to have an adequate stock of dwarf compact plants ready for action at the end of May. For several months past the plants have been playing an inactive part, stationary in the boxes where they were rooted from cuttings; but young green tips and increasing growth tell plainly that the resting season is over. The growing of bedding plants perhaps belongs to the A B C of the gardener's work; but with this, as with other operations, if the small matters are neglected the result is invariably unsatisfactory. How often are bedding "Geraniums" left in the cutting boxes till late in the spring, and when shaken out and potted roots are mercilessly broken through being matted together, tops are elongated and crowded, and even if capable of doing it the plant has not time to recruit and assume a bushy appearance before it is drafted to the flower bed.

A glance at the bedding Pelargoniums now will show that no time should be lost in shaking them out of the propagating boxes, and transferring them to small pots. If the stock of any variety is low the tops may be pinched out, made into cuttings, and will root readily on a gentle hotbed. Spring propagation is necessary with some varieties of the tricolor section, such as Black Dogulas, which often do not make sufficient growth in the summer to get the full complement of cuttings, and consequently the plants have to be lifted and wintered, and a stock raised the following spring. There is little art, perhaps, in potting a bedding plant, and the work is generally entrusted to beginners. It is easy to make mistakes, however, in

this operation, and hundreds of plants may go off through putting them too deep in the pots, when moist soil pressing round the green stems causes decay. Having in view a dwarf bushy plant, the points of the shoots should be pinched out, to encourage a branching habit, and the plants be grown close to the glass in a cool structure till the time arrives for hardening.

So much for the Pelargoniums, and now a few reminders about the bedding Calceolarias. To many growers this plant is a source of constant trouble on account of its propensity to die off in the flower beds, thus leaving gaps which at that time are difficult to fill up. Many would dispense with it on this account, but we have no plant to take its place in making a display of bright yellow. The evil is often increased by two mistakes in treatment—viz., coddling and late planting. At no time does the bedding Calceolaria require more protection than that afforded by a cold frame, covered during periods of severe frost, and very often the fatality in the plants during the summer can be traced to late planting. It may not be the general rule, but still it is a common one, to leave the Calceolarias crowded together in the frame till other tender plants are put out at the end of May or early in June, and consequently they have no time to become strong and established before the height of the summer, when they invariably succumb.

April is the best time to transplant Calceolarias, and here a difficulty arises, for often the beds are tenanted by other plants at that time. I have overcome the obstacle by preparing a nursery bed of light soil and digging in leaf mould and sand. The plants are removed from the frames before they get overcrowded, and are planted in the nursery bed, from which they lift later with good balls attached. With this treatment I have had little trouble through plants dying off, though, of course, if the beds are at liberty early there is no need for the intermediate stage. Of the broad and narrow-leaved varieties the latter seems the more prone to the evil referred to.

There is abundance of work in the propagating house just now in preparation for summer planting. In the case of stored Dahlia tubers, Nature has asserted herself, and if left longer without attention, they will suffer. I have never experienced difficulty in raising good stocks of these indispensable plants from cuttings, and never followed but one method. The old tubers when taken from the store are placed on a bed on one side of a low span-roofed pit, in separate varieties, and on the other side light soil is spread several inches thick for the reception of the cuttings. As soon as growth commences, the cuttings are taken off and inserted in rows in the bed on the other side of the pit, taking care not to mix the varieties. The two rows of pipes running beneath provide a little bottom heat, and it is rarely that a cutting fails to root. When growth commences they are lifted with a small hand fork, placed in 5-inch pots, and stood in a cool house, where they remain till they can be placed outdoors with safety. Frequently young Dahlia plants are grown in pots so small that the growth becomes weak and stunted, and in consequence of this, the plants are some time before they get a good start after being removed to the beds or borders.

Blue and white Lobelias will always be popular bedding plants, and it is rarely that the stock of these plants is found to be too large. Many rely on seeds for their supply of plants, and if the strain can be depended on there may be nothing to say against this mode of propagation. Unfortunately, however, many plants raised in this way do not possess the dwarf, compact, free blooming habit which makes Lobelias so pleasing. Having got what you require, it is obviously a good policy to make an effort to keep it, and there is no better way of effecting this than to grow a few plants purposely for stock and propagating from cuttings. If inserted now in light soil in small boxes or pans, and placed over the pipes in a warm house, covering for a few days with a square of glass, Lobelia cuttings will root readily, and when large enough to handle they may be removed to small pots or be pricked off into larger boxes. Plants raised in this way are invariably more satisfactory than seedlings.

One thought suggests another, and much space could be readily filled in giving reminders about the important work of preparation for summer bedding. The fault of being too early in these operations may be remedied, but to be too late is often fatal.—H.

SPIRÆAS.

THE popularity of these beautiful flowering plants is still well maintained, although there are times when the most common variety—japonica—is placed upon the market in such quantities that very low prices are realised, and growers are inclined to declare that there is no money in Spiræa growing. I am inclined to agree with them to a certain extent; but only as far as this—viz., that they are unremunerative when placed upon the market at haphazard times. Let anyone produce a thoroughly good collection of plants in pots, and plenty of cut flowers at Easter and Whitsuntide, and they will find them fairly profitable.

In all private gardens, too, they are of great service at these festive seasons, for there is usually a large amount of decorative work to be done, for which nothing is more suitable than good plants of *S. japonica*—plants which have deep glossy green leaves, with the feathery plumes rising well above them. The newer varieties—*astilboides* and *compacta multiflora*—are good in their way, and are worth growing for the sake of variety; but to my mind neither of them is so generally useful as *japonica*, because almost before the flower spikes are fully developed a brown tinge may often be seen at the base of the flower spike, and the flowers never seem to retain their purity more than a couple of days after they are fully expanded.

The cultural treatment of the varieties above named may be considered identical, except that *japonica*, being the more plentiful, is usually relied on for early forcing. Spiræas are the simplest possible plants to grow when brought on gradually in a cool or intermediate house; but when subjected to sharp forcing a slight mistake will cause them to cut a sorry figure, the leaves becoming browned and curled almost beyond recognition. This state of affairs is brought about by several causes, but principally through overwatering. During the bright sunny days of spring, when Spiræas are growing rapidly, it is almost impossible to overwater them, and this fact leads many to water too freely early in the season. The great majority of cultivators who have at various times placed Spiræas in strong heat during January and February have, I suspect, found a few of their plants curl badly in the foliage, and may not, perhaps, have made any special attempt to find out the cause. I have frequently watched such plants closely, and have found that if they are turned out of their pots as soon as the brown tinge is noted in the edges of the leaves, the roots, though white in some parts, will be brown in others.

In cases where the roots are not examined till the plants are in a more advanced state of disfigurement the roots will be found quite brown throughout, and in many places decaying, the soil being quite wet. It is also a matter of some surprise to note how very few roots have been formed compared with the entangled masses to be found in the spring. The above remarks show how comparatively little water is required early in the season. A too dry state of the atmosphere also aggravates the evil, and although it is not wise to keep the foliage continually saturated with moisture, the floors and stages of the house ought to be uniformly moist.

During March and April, when the weather is bright, strong clumps will require immense quantities of water. They should be examined twice and often three times daily, always endeavouring to apply water just as the soil is beginning to get dry, then giving it copiously. When plants are placed on dry stone or slate stages saucers placed under the pots will greatly lessen the labour of watering, but should dull weather prevail for several consecutive days it is a good plan to empty the water in the saucers and fill them again when bright weather comes. A weak solution of soot water is, I think, the finest of all stimulants for Spiræas, though other kinds of liquid manures are beneficial when applied occasionally. Vineries in which Spiræas can be set upon the border are excellent positions to force the plants in, as the moisture arising from the damp soil suits them to perfection.

S. aurea reticulata is an excellent variety for forcing in both pots and borders in the open air, as the golden-striped foliage forms a fine contrast to the majority of other spring-flowering plants. *S. palmata* (scarlet), and its varieties *alba* and *elegans* (rose), are grand for pot work, as they throw their huge spikes to a great height, and these, combined with the large handsome foliage, supply striking plants for room decoration. The flowers, too, are always useful in a cut state on account of their long stems. It is not wise to attempt to force these varieties rapidly, for they are seen at their best when brought on gradually in quite a cool house, but when required earlier they will bear gentle forcing if a free circulation of air is kept up.

When grown in the open air they are usually planted in mixed borders, and in such positions they are so effective that it is a pity to have to cut the flowers for filling vases. By a little systematic management this, however, may be avoided, as the clumps grow rapidly, and may be quickly increased when liberally treated. The plan I recommend is to divide the plants into as many pieces as possible as long as each has one strong crown. Do this in the autumn, and plant them in well-manured soil in the reserve garden. Keep the

soil frequently stirred during the spring, and in summer mulch with short manure. With this treatment grand spikes of flower on sturdy stems are produced, such as the decorator often envies, but cannot always obtain.

The demand for ent flowers is now so great that practically the only way to produce large quantities in really good condition is to devote a certain amount of space to each kind.—H. D.

ORCHARD NOTES.

THE improvement in the fruit cultivation of the country is silently and steadily going on, and is the result of a variety of influences. There are, for instance, the more inquiring spirit of the age and the spread of the literature of gardening over a wider area than in any previous time, and at a price to suit the humblest pocket. To satisfy that craving for knowledge, too, there is the quiet influence of the best gardeners freely exerted in their respective neighbourhoods. Added to these we must put the clear, and therefore easily understood, directions as to planting and management contained in the catalogues of most fruit tree growers.

But—and this is a large “but,” for I can speak from intimate personal knowledge—one of the greatest of present day influences is the excellent instructions and practical illustrations of fruit tree management in all its stages, in every locality, and on the spot, to the people most interested, of the horticultural instructors of the various County Councils. Some people may—nay, some people do—scoff at this way of teaching; but when there are such men as instructors on the County Councils as Mr. Edward Luckhurst for Derbyshire, and Mr. A. H. Pearson and Mr. John Smith for Nottinghamshire, two counties of the Midlands of which I can speak, we may know that the very best of all instruction, both theoretical and practical, is given, and is, in its way, being acted upon all over the country.

What we have to do is to keep “pegging away” (that is really the reason of these notes) at the subject in season and out of season. We all know that to impress any lesson on the minds of children it is necessary to repeat it again and again until it is firmly fixed. All teachers act upon this principle, and all wise learners, too; for as we that are older are but children of larger growth, we find it necessary to have repeated over and over again any lesson which is of the first importance. Every student knows that in the getting up of any subject, if his reading is to be firmly impressed on his understanding, it is wise to write out what he has read, or is reading, and this amounts to a systematic and detailed repetition which has its results in fastening the subject unshakably in his mind. As G. H. Lewes once said, “The pen keeps the mind from staggering about.”

Take only two lessons (enough at one time), and let us try to drive them home. In many old orchards there are antiquated specimens of Apple trees with their tops in the sky and bare of branches below, practically barren and useless. Well, these, if headed down and grafted with well known varieties of strong constitution and good fruiters, can have their life renewed and be made exceedingly valuable in the future. No better instance of this act and its results could be given than that recorded by Mr. Wm. Bardney, in the *Journal of Horticulture* of December 8th, 1898, page 434, of the experiment in Ireland; and many similar beneficial results have been given by other fruit-growers, notably the practical instances, which anyone may see by a visit to Southwell, of the regrafting of old barren trees by Mr. Merryweather with Bramley's Seedling Apple.

The other lesson is the one of feeding. It was at one time, and is now in very remote places, the popular idea that all that is required to plant an orchard is to buy a few trees in the market, stick them in in any spare place, and then expect them to grow and fruit; and as to any old orchard trees requiring feeding with either liquid or solid manure, why that was the last thing thought of. These ideas are being slowly but surely driven out, and that largely by the influences I have given above. New life, then, by regrafting old trees, and better feeding of both young and old orchards by liquid or solid manure, are the two lessons we must all try to teach and to learn, again and yet again.—N. H. P.

SENECIO PETASITES.—This species makes a good companion for *S. grandifolius*, and is well worth growing, either as a pot plant, or planted in a border for the greenhouse during spring. It is a native of Mexico, and has large handsome foliage. The leaves are more or less reniform, with undulated margins and well-marked veins. They are often as much as 9 inches across, and make a striking feature among other plants. The heads of flowers are something similar to those of the common Groundsel, but larger, and are produced in large, loose, terminal panicles. It is of weaker growth than *S. grandifolius*, but the heads of flowers are quite as large. Like *S. grandifolius* it is of easy cultivation, little more attention being required when planted out than watering and cutting back annually. The height of the plant can be regulated by the pruning, plants 5 or 6 feet high being a useful size.—W.



TRICHOCESTRUM.

Though little grown by orchidists, this genus contains some very pretty species, and anyone who likes small yet showy blossoms may do worse than grow such as *T. albo-purpureum* or *T. tigrinum*, two of the best known and most useful in the genus. They thrive best in small pans or on blocks of Tree Fern stem, any great amount of compost about the roots being injurious, and the safest plan for them is a position not unduly shaded or far removed from the glass in the Cattleya house. They must never be really dried off, but during winter little moisture is needed, especially in dull weather.

EPIDENDRUM ENDRESI.

A native of Costa Rica, this is one of the loveliest little Orchids in cultivation; it is very rare. From the cylindrical stem the little erect racemes proceed, containing many flowers, these being pure white, with a few purple streaks about the lip. Whatever large plants of the species may do, it is certain that the small pieces in cultivation generally do not require large pots, nor can they stand much compost about the roots. Pans or pots nearly three parts filled with drainage, the rest made up with peat fibre and sphagnum moss, will suit it well. The growth will probably be most free in a shady and warm house, but from a proper cultural point of view a light not too sunny position in the Cattleya house will suit it best.

ODONTOGLOSSUM MINIATUM.

The peculiar habit of this Odontoglossot leads to its being ill cultivated in many places. The pseudo-bulbs are carried more distant from each other by the rhizome than is usual in the genus, and soon a plant potted in the ordinary way grows over the rim out of the reach of the compost. A flat-trellised raft would prevent this, and the young roots encouraged by the addition of new compost annually, just as they are being produced, the plant would gain strength and soon flower freely. In the one case it is starved for want of something to root into; in the other the warts of the roots are anticipated, as it were, by adding the compost just as they begin to push from the rhizome.

O. miniatum has a very remarkable appearance when in flower, the large, almost cylindrical, racemes of deep chestnut-brown blossoms being always attractive. Individually the latter are about 2½ inches across, the brown tint in the segment usually being relieved by a margin of bright yellow. The plant is a native of the New Grenadan locality, and likes a cool moist house, such as the majority of the genus thrive in. Plentiful supplies of water must be given to the roots all the year round, but especially during the summer months, when spraying or lightly syringing must also be practised. Peat and moss kept in a rough open state by the addition of pottery ballast and charcoal is the best compost.

ZYGOPETALUM PERRENOUDI.

In most of the hybrids in which any of the *Zygopetalums* of the Mackayi section have had a share of the parentage, the progeny has been of strong and vigorous growth. It is the case with the one above noted, which was raised on the Continent some years ago, and is occasionally seen in this country. For this reason I should have expected to see the hybrid shown at the Drill Hall some time since following the lead of others. *Z. Perrenoudi* is a pretty plant of free flowering habit, the spikes containing several flowers, the sepals and petals of which are olive green, the lip bright violet and purple. It was raised from *Z. intermedium* and *Z. Gaubieri*.

ODONTOGLOSSUM EDWARDI.

Very bright and pretty just now are the flowers of this Odontoglossot, though they are individually small. The colour is a bright rosy purple, quite unusual in this genus, and indeed not common in the Orchid family at all. Little difference will be found in the cultivation of this and the other members of the genus, but it likes larger pots than the crispum set for instance, and also a rougher compost, the roots being much larger individually, and very freely produced when the plants are healthy. *O. Edwardi* commemorates Mr. Edward Klabeck, an intrepid traveller, who sent home many beautiful Alpine Orchids.

CHARCOAL FOR ORCHIDS.

"J. T. B." has put his query in a different form to that answered in the editorial footnote on page 103. The question then was, "Is charcoal absolutely necessary?" and he proceeded to answer it by saying he had grown Orchids well without its aid. But his second query was answered in the footnote referred to before he put it. Does charcoal do any good? To quote from the footnote, "It takes up moisture easily, and gives it off again to the root spongioles, while the roots show their liking to it by clinging to it firmly." Very good; we must concede that charcoal of good quality is useful. Bad charcoal is like bad peat or moss or bad butter, or any other commodity. But we must not for this reason run down these materials as a whole.

Respecting "J. T. B.'s" argument as to decayed charcoal, he has not proved that this was the cause of the roots dying. The compost must be in a bad way when charcoal decays in it, and this would sufficiently account for the death of the roots. I am quite at one with "J. T. B." respecting the need of attention to small matters, and the habit of observation of these, which "J. T. B." has evidently practised to a large extent, is also to be commended. I hope that other Orchid growing readers will follow his lead, and let us hear of their treatment through these pages, and that "J. T. B." will take my short criticism in the spirit it is intended—*i.e.*, with a view to find out the real truth.—H. R. R.

ORCHIDS AT WOODHATCH, REIGATE.

When I saw very recently the most beautiful show of Orchids, but especially of *Dendrobiums*, Mr. T. B. Haywood has at his charming residence, I could but wish that Mr. Salter, the able grower, had permission to set the splendid collection of these up at the Drill Hall, where hundreds could see them, rather than only the very few privileged to visit them at Woodhatch. Not only is there a fine and varied collection, but the plants indicate culture and care, the highest order of excellence—indeed could not be excelled. What huge pieces of *D. nobile*, grand plants from 3 to 3½ feet through, literally masses of bloom; then what a show of the fine old *Wardianum* in variety, all so beautiful, so varied in markings, yet each one having the dominant characteristics of large flowers, tipped sepals, and intense orange coloured lips.

The Woodhatch form of *D. Ainsworthi* in numerous plants is a singularly attractive one, and the entire stock practically is here. Beautiful indeed are several plants of *D. splendidum grandiflorum*, and still richer in colour are *D. nobile nobiliss*, and the intensely hued *nobile Sanderianum*. Very rich-coloured also is *nobile roseum*. *D. Findlay-anum* is a lovely variety grown in baskets; and singularly pure, with markings of the clearest, is *D. nobile Amesiae*. But there are many others, and some good seedlings, with about 150 promising ones in various stages of growth yet to flower. *Phalenopsis grandiflora* is in grand form, so also is *Schilleriana*; and *Masdevallia tovarensis*, with small white spathes, is in great abundance. But the collection is a large one, and is well worthy of a special visit.—A. D.

DENDROBIUM NOBILE.

This old and useful plant will now, in many cases, be making a brave show, and where a fair number of plants is grown there is nothing that lends itself with better effect to any use it may be put to. The cultivation is of the simplest, and it is to be found growing in almost all kinds of positions and composts; but, like everything else, it amply repays any attention it may receive from the cultivator.

The cardinal points in the cultivation of *D. nobile* are abundance of heat and moisture when in active growth, and after they have finished a long rest in a dry house that does not go much below 50°. Care must be taken that the plant is not allowed to shrivel, neither must it be allowed to get soddened, or the roots will decay; keep everything scrupulously clean and the compost sweet, as no plant I know detests anything sour about their roots more than *Dendrobiums*. Those that require top-dressing, repotting, or rebasketing should have attention as soon as they pass out of flower. The compost used may consist of the best peat fibre, with all the small particles taken out, mixed with nearly as much live sphagnum moss, with the addition of some pieces of broken crock or bricks. Great care must be taken after a plant has been repotted not to give more water than is really necessary to prevent shrivelling, until the roots are seen to be running freely, and the young growths pushing strongly, or they are apt to turn black and decay.

There are many varieties, all of which are beautiful; but were I asked to name a few of the best, I should select amongst dark varieties *D. nobile nobiliss*, which is as yet without a rival; *D. n. Sanderianum*, *D. n. Harrisii*, *D. n. Cooksoni*, and the old *n. pendulum* and *Tollianum*; with such light varieties as *D. n. Amesiae*, *n. album*, *n. albiflorum*, *n. Ballianum*, and *n. Murrhinnianum*. There are many intermediate shades between the deep richness of *D. n. nobiliss* and the pearly whiteness of *D. n. Amesiae*.—J. BARKER, *Hessle*.

PRUNUS PERSICA VULGARIS ALBA FL.-PL.

THE value of the many forms of *Prunus* for the adornment of borders of some width, and of shrubberies, is becoming more and more apparent every year. During the early spring trees, young or old, make such a display as certainly cannot be excelled, if even it can be equalled. Then,



FIG. 53.—PRUNUS PERSICA VULGARIS ALBA FLORE-PLENO.

too, they are suitable alike for the small or the large garden—in fact, it is difficult to conceive where they would be really out of place. At the meeting of the Committees of the Royal Horticultural Society which was held on February 8th, Messrs. W. Paul & Son, Waltham Cross, received a first-class certificate for *Prunus persica vulgaris alba flore-pleno*, of which a spray is shown in the woodcut (fig. 53). It is one of the handsomest we have seen, and must, with its semi double pure white flowers, become an object of universal admiration. The widespread appreciation that is accorded to *P. Pissardi* on account of its chastely beautiful flowers and striking leafage is thoroughly deserved. This popularity is our reason for reproducing (fig. 54) a picture which, though it shows the profusion of flowers, fails to depict the beauty of the leaves.

PEAS.

IN the estimation of many people Peas are the daintiest of vegetables. There can be no question about their wholesomeness, and it is possible that a great percentage of persons, if asked which was their favourite vegetable, would answer, Green Peas. From scarcely any garden in the season are Peas absent, and I think gardeners often receive instructions to have as prolonged a supply as possible.

To obtain produce of the highest quality the best of cultivation must be given, or success cannot possibly be achieved. It is usual

to sow early varieties on a south border, and in this position, year after year, Peas will be grown with scarcely any change of crop for the soil. In a case of this description a dressing of lime has been found of great benefit, when the haulm has shown signs of becoming yellow unduly early, and when the crops have become lighter. This latter may possibly have been more the effect of continual manurial dressings causing the soil to become in a measure soured, rather than from a want of rotation in cropping. In any case, for all practical purposes, the desired result was brought about by the simple remedy of liming, and to practical men that is sufficient.

Good cultivators are agreed that a deep fertile soil rich in vegetable mould, and which has been manured rather heavily for a previous crop, is the ideal to be aimed at in growing Peas. I like to sow on ground which has previously grown a crop of Celery. In light soils it is often advised to sow midseason and late varieties in trenches. This is all very well if during a protracted drought water can be given copiously when needed, but if water is not plentiful, it is far better to sow in the ordinary way in drills, and afterwards to mulch the surface with any suitable materials which can be procured.

Sowing on a warm border in November is practised with success by some growers, though personally I have never been able to get these November sowings to produce Peas any earlier than those sown at the first favourable opportunity in the early part of the year, sometimes in January, more often in February. As soon as the first plants make an appearance above the ground another sowing of early varieties is made, and, with the exception that later varieties are used, this rule is carried out until about the second week of June. In July we usually sow some variety, such as William Hurst, to give a few dishes of late Peas.

For years the raisers of new varieties kept sending out early Peas which were ten days in advance of any other in cultivation, and according to calculations we ought to have been gathering green Peas out of doors at Christmas years ago. But "man walketh in a vain shadow," or the grower of early Peas does, if he makes no allowance for influence of climate and situation, and if he thinks that by variety alone comes salvation in the way of a heavy and precocious crop. In some establishments it is customary to begin the season with pot culture, and the many excellent dwarf sorts now in commerce should make this style of Pea culture more profitable than it was a few years ago.

The system of forwarding the first crops by means of turves, boxes, and such contrivances has been recently adverted to in the *Journal of Horticulture*. In numerous instances good results accrue, but care is required in the matter of giving slight shelter after planting out should the weather prove rough and cold. I still grow Ringleader for my early variety; some selections are much superior to others. With me William Hurst is far better than American Wonder, and the latter has been "scratched." Gradus comes next, and a really good Pea this is. Some may prefer Giant Marrowfat, but the former gives me the heavier crop, and must take precedence. Duke of Albany I cannot yet spare; while Dr. Maclean I always have, as it is one of the most prolific Peas, and is of fine quality. It has the fault, or some people would consider it such, of being pale coloured, but we can afford to overlook this on account of its obvious merits. Sensation has proved to be of exquisite flavour, but was not fruitful enough for our purposes, and so had to be discarded. G. F. Wilson still does good service with us, and another first-class variety is Autocrat.

What a number of really fine sorts of these 3-foot Peas there are. It is scarcely needful nowadays to grow any of the tall brigade, but I must confess to a liking for Ne Plus Ultra and Champion of England. For the last year or two I have had Conundrum as a late sort; it is too tall, but for an end of the season Pea is of very fair quality. Sutton's Latest of All has given me many late dishes. I have not mentioned Stratagem, Exonian, Oracle, and others, as it is difficult to particularise when there are so many that are excellent in every way.

Never have rows of Peas too near each other. It is far better to give more room and grow some other crop between the rows. Three foot varieties should have 4 or 5 feet, and the taller sorts space accordingly. We then can plant a row or rows of Potatoes, Cauliflowers, Spinach, and salads between. Staking is a matter of some moment, and must not be neglected. As soon as the young growths are 3 inches high it is wise to draw a little earth to them and stake at once; this gives protection, and the Peas take to the sticks better than if they are allowed to become a foot or so long ere anything is done. We make a practice of putting short boughs to the dwarf sorts, as this keeps them off the ground, and they crop much better for the little extra trouble, besides being so much easier to get at when gathering time arrives.

In some localities birds become a pest if preventive measures are not vigorously followed up. As soon as the plants push through the ground sparrows and chaffinches nip off the ends. Black thread strung along the rows we find a good safeguard. The worst comes to us, however, when the Peas are staked, as then the sparrow demolishes the leaves, and if it cannot be stopped the evil is most weakening.

Soot applied when the foliage is damp is one of the remedies, also a weak solution of petroleum sprayed over the rows with a syringe every other day for a time. When mice are troublesome trapping must be persevered in, or some other means should be taken to keep in check these pests, or great loss may result. The seeds can be slightly moistened and then shaken in some red lead before sowing. Paraffin sprayed over the surface of the ground where the Peas were sown has been the means of keeping them from their depredations.

Enough has now been said to show that to insure success with this greatly esteemed vegetable, much attention, perseverance, and watchfulness are necessary.—J. SHALFORD.

I FEAR, so numerous are Pea varieties now, so different do they grow on various soils, and so varied are they held in estimation by diverse growers, that it would be probably impossible for anyone to fix upon say a dozen of the best varieties. Moreover, persons who grow Peas know only those they grow out of the scores of varieties in commerce, hence their judgments in relation to the best varieties have to be tempered by restricted experience. I have been able to test several dozens during the past seven years, on various soils, and generally I have found those that are good in one soil have been good in another—and higher praise could hardly be given; but from out of so



FIG. 54.—PRUNUS PISSARDI.

many, as newer varieties come into commerce, there must of necessity be a gradual weeding, especially when, for various reasons, it is needful to compress the range of selection for trial.

My chief trial this year will be on the Surbiton group of allotments, where last year, in spite of the long drought, Peas did so well. As I grow varieties only that are suitable for the purposes of the allotment holders, who scrutinise the varieties very closely when at their best, none exceeds 3½ feet in height, and they are this season limited to fourteen only. These are Webbs' Senator, a grand second early; Sharpe's Triumph, Carter's Seedling, Sutton's Peerless, Webbs'

Wordsley Wonder, Dobbie's George Clelland, Sutton's Magnum Bonum, Johnson's Prolific Marrow and Magnificent, Sydenham's Majestic, Webbs' Astronomer, Sharpe's Queen, Dobbie's Gladstone, and Carter's Michaelmas. The sowing was made on the 8th, and thinly, a pint sufficing for a 90 feet row. Not only is thick sowing unfair treatment, but varieties cannot, when thick, display their true characteristics.—A. D.

FIRE BLIGHT ON APPLES.

I WAS naturally much interested in reading the account given by Prof. Wm. Smith (Leeds) at the R.H.S. meeting, of the diseased Apple shoots which I sent to Mr. Bunyard. I enclose separately an affected piece of the wood for your inspection, and send a few remarks. I dressed the affected parts with a mixture of sulphur and other matter, which causes the yellow appearance. I see there are numbers of blueish insects of considerable size. The tree was a large pyramid on Paradise, cut down close to the ground and grafted with Cox's Orange—graft two years old, growing strongly, but the leaves were not of a healthy colour in the summer, yet not "blackened," but grey and silvery. No sign of the bark being affected was visible till November, when cracks appeared and rapidly spread, the bark opening, rolling back, and disintegrating with remarkable rapidity.

Professor Smith says the disease is at rest in dry weather and winter, but we had no wet till November, which may account for it. The outward signs ceased after the sulphur application, but as I have no desire to spread an American disease among English Apple growers, this and the next tree which is also affected, will be grubbed up and burnt.—W. R. RAILLEM.

[The specimen is an object lesson, for which we are much obliged, and may at some future time illustrate and describe more fully. We found some bacteria belonging to the Micrococci, which is common on nearly all fungi in a state of decay and many other vegetable substances, and in mode of life wholly saprophytic. The whole and yet not sole cause of the graft dying is wet entering from the crown of the stock on both sides of the scion or graft between the bark and the wood, where the graft had never "knit" with the stock, but only at the base of the scion and lower part of the incision through the bark in the stock. The wet entering from the crown into the opening between the bark and wood of the stock on both sides of the large graft prevented the inner bark of the scion and stock "knitting," and the bark of both died back near the crown and from it downwards. That began the mischief, but the scion or graft would not have died unless something else had intervened—that was the spore of a fungus. We can clearly trace the beginning and end of the work, so far as the death of the graft is concerned, in the specimen. The fungus is still in the stock eating its life away between the bark and the wood—that is, living and growing on the cambial layer. The parasite devoured the cellular tissue at the base of the scion, cut off the descending assimilated matter, and the tree showed "fire blight" in the top. The fungus exists as a white felt-like growth between the bark and wood, and is the mycelial growth of *Polyporus vaporarius* or *Poria vaporaria*. About the dead scion is a quantity of dead matter and partly living on the size of the stock, and in this a number of eelworms, *Tylenchus obtusus*, commonly called root-stem eelworm, with the Micrococcus before mentioned. Between the dead bark and wood, where the fungus has done its work, are found a number of slate or lead coloured creatures, or, as you term them, "blueish insects." They are members of the Thysanura, family Poduridæ, by name *Achorutes purpurascens* (Lubbock), about one-twelfth of an inch in length, and perhaps the finest jumping animal in the world. It lives on dead or decaying matter. We found nothing more. Prof. Smith had of course only the leafy part to investigate, and gave opinion accordingly, it being very common to submit imperfect specimen for investigation, and thus place the investigator at a great disadvantage.]

PERENNIAL PHLOXES.

THE herbaceous Phlox is one of the noblest flowers in the hardy flower garden; no other plants give such a wealth of flowers for three months. To insure the best results, cuttings of sucker growths should be taken in April of each year, and inserted in cold frames in sandy soil, or if a frame is not available, the cuttings can be rooted under the shade of a north wall in a sandy bed. These cuttings, when well rooted, must be transplanted in June to a permanent bed, or other desired position. If the situation is not ready for their reception, they ought to be placed in a nursery bed for the summer.

Phloxes appreciate good treatment. A deeply dug, well manured soil, with heavy mulchings when the plants are in growth, and, if possible, liquid manure, go far to favour the production of large close spikes, with fine flowers of glorious colour. The stools ought not to remain more than three years. These may be divided in March and

transplanted, but such good results cannot be had as from the method previously advocated.

The varieties in the decussata section are innumerable, but I shall content myself with naming two dozen that I selected when in bloom last July, and all of which are superb, and these are: *Eclairer*, rosy lilac, centre salmon, a dwarf grower with a massive spike; bicolor, light salmon, dwarf; B. S. Williams, rosy crimson; *Comedie*, lilac, white edge; *Congress*, dark lilac, very distinct; *Defiance*, large pip, crimson; *delicata*, white, with a lilac eye; *Eugène Danzanvilliers*, delicate rosy lilac white; *Lucy Genin*, the best white; *L'Avenir*, deep salmon, dwarf bushy spike; *John Forbes*, pink, with crimson eye, very large; *Henry Bryson*, an improvement on coccinea; *Meteor*, purple lilac, distinct; *Major Houston*, intense purple crimson, fine spike; *Pantheon*, very fine; *Baccili*, rose, dwarf; *Aphrodite*, pure white; *amabilis*, good salmon; *Sir J. Douglas*, bright salmon scarlet; *Selection*, mauve; *Progress*, bright rose; *Mrs. A. Ritchie*, crimson; and *Sheriff Ivory*, light salmon, crimson eye.

When coming into bloom the spikes should be staked out, as light and air are essential to perfect development. The stems too are very brittle, and without support may be snapped by a gust of wind.—S. J.

SOUGHT AND FOUND.

(Continued from page 185.)

WE quickly found a great benefit through tapping that spring. The land would bear to fork out the beds of rushes preparatory to sowing a meadow mixture of grass seeds the following spring, and thus we reclaimed quite an acre of land as extra pasture. But to make more certain, I got Tillen to run two more short drains at right angles down the bank to the streamlet; and after that I put his draining capabilities to a severe test. I said, "You see how undulating the land lays in wrong directions. It seems to me to represent a tap for an immense extent of rising country above us. It will be impossible to drain it by an easy system, as there are substrata of gravelly loam or clay running parallel in wrong directions. It will be best first to lay a few deep drains longitudinally in the low inequalities of the land, and then feel our way as best we can by shallower ones to feed them from those beds of water weeds which you call 'smart grass' and 'cat tail.' That will keep you continually in work from December till the spring."

I will repeat the word "continually" (for you, Mr. Editor), feelingly, for the "Three Kings or Jack's Booth," and the "Dog and Partridge," not far off, had such attractions for "drainer John," who would much too frequently come to his work in a state quite unequal to the demand. "John Tillen"—very severely—"how often am I to tell you that I will not allow a man to come on my premises unless he is sober? Go home, I advise you, and come to your work when you are in a fit state." Further expostulations were useless to his stolen brain, so down he would throw his "graft," or other implement he might be holding at the time, and, in unparliamentary language I fear, tell me to do the draining myself for the future, and off he would go. But not often to act on my advice, "go home," for I often heard of his using the old cattle pound on Upton Green—in the next parish where he lived—as a half-way dormitory. "Tillen's bedroom" it is called by some, even to this day. It is sad to remember how this habit, in wet clothing often, shortened the life of a strong and most capable man. I missed him.

However, to cut a long story short, it took three years for us to complete so complicated a series of drains. I send you a peep at them by chart ("chaos!"). Please do not let your gasping basket get a glimpse of it, for, in that case, I shall be nonplussed, as by its means I can alight upon any one of the drains requiring rectification. They have behaved almost perfectly up to this day. The water-grasses have quite disappeared, and every inch of the land has become cultivatable. The dark lines on the map mark out the third series, the blue the second, and the red the first—the deep mains, which convey the under-plus water down to the river "ditch."

"Ditch! Edward Pearce, you insult it by calling a tributary of the Kennet a ditch!" "It is not a tributary!" quoth "Teddy," "it is the river 'Auburn,' from the Hampshire Hills, and comes past Darby Griffiths', Padworth House." "'Sweet Auburn!' river of the vale, and all the more reason why it should not be called a 'ditch.'" Good old "Teddy" Pearce, he was a deft hand at pruning and preparing a species of Willow largely planted and trained into tall stems hereabouts, on the margins of waterways, for the purpose of cricket-bats, erst for making Dunstable bonnets. "Teddy" gave me his pruning knife, a sort of two-edged blade, fixed at a right angle on the top of a long pole, two young Yew trees, and a Portugal laurel, as mementoes, not long before he died.—ROBT. FENN.

[We have returned the plan referred to, and are thankful we have not to undertake a similar task just at present. The system is admirable, and we fail to see how, after proper laying of the drains, it could possibly fail.]



RECENT WEATHER IN LONDON.—No one could have wished for pleasanter weather than that which prevailed in the metropolis on Saturday and Sunday. However, it was not to last, for on Monday and Tuesday we were wrapped in a dense fog, which reminded one forcibly of a November or a December day. Wednesday brought a change to more cheerful conditions.

— WEATHER IN THE NORTH.—The weather of the second week of March has been variable, rain and sunshine alternating daily with a generally high wind from the west. Sunday was the finest day of the season, with quite a spring-like sunny atmosphere. The forenoon of Monday was wet, the afternoon pleasant; in the evening the thermometer stood at 47°. The morning of Tuesday was dull and somewhat colder.—B. D., *S. Perthshire*.

— THE NATIONAL AURICULA AND PRIMULA SOCIETY.—The twenty-second annual report of the Southern Section of this Society reaches us from Mr. T. E. Henwood, Hamilton Road, Reading, the Hon. Secretary. The report is written in a congratulatory vein, but emphasises the desirability of enrolling fresh members. We observe that a packet of Alpine Auricula seed is given gratis to every member of the Society through the generosity of Mr. J. Douglas and Mr. C. Phillips. The annual show will be held at the Drill Hall, James Street, Westminster, on April 19th, 1899.

— THE MIDLAND CARNATION AND PICOTEE SOCIETY.—From the schedule of this Association, which has come to hand, we learn that the Exhibition will this year be held on August 2nd and 3rd. The prizes, cups, and medals offered for competition on this occasion reach a value approaching £200, and this sum ought to draw forth some superb collections of flowers. From the balance sheet and report embodied in the same book it is pleasing to see that the Society's affairs are in a satisfactory state. The Hon. Secretary is Mr. Henry Smith, Tenby Street, Birmingham.

— ACACIA LEPROSA.—This species can be grown and flowered well in pots; but to be seen at its best it should be planted against a pillar or other similar support, the main branches being tied close to the pillar and the side shoots allowed their freedom. In this way it grows freely, and quickly covers a large space. By cutting back the side shoots each spring after flowering much better results can be had, for long arching growths are made, 3 feet or more long, which are literally smothered with pretty golden heads of blossom for a month or more in February or March. In addition to its beauty whilst in flower the pretty, graceful growths hanging from a pillar are very attractive from July onwards until the pruning takes place.—D.

— PLANTING TOMATOES DEEPLY.—I have to thank "H. D.," who is a skilled cultivator, for publishing the results of his experience in reference to the effects of planting Tomatoes deeply or otherwise. He shows—and, as he states, from a far larger experiment than I had suggested—that burying stems deep is not productive of any better results than is shallow potting, no stem or adventitious roots being encouraged to form. This experience fully bears out what I have maintained—viz., that the roots which Nature furnishes to Tomato plants are, under ordinary culture, fully capable of sustaining the plants in carrying heavy crops, whilst burying naked stems to induce them to put forth new or adventitious roots is but utilising them at the expense of Nature's roots. "H. D." admits that even under his careful culture some seedling plants will have elongated stems; but even if so they will be found to have a plentiful supply of Nature's or basal roots all the same; and as he has shown conclusively, as the result of his published experience, that burying stems deeply does not increase crops, we are driven to the logical conclusion that elongated stems are buried to hide their nakedness rather than to help increase productiveness, although growers will fondly hug the illusion that in doing so such is their object. One would think that all plants were grown in pots to be afterwards moulded up the stems. Thousands of plants are put out from pots into the open ground, into soil beds, into boxes and troughs, the stems not being unduly buried, and these are never moulded up, yet they produce superb crops. Really where plants are raised by thin sowings stout and sturdy no one in planting thinks of burying the stems.—A. D.

— GARDENING APPOINTMENT.—Mr. Buckett, late of Norrystbury, Barnet, Herts, has been appointed gardener to H. Graystone, Esq., The Moor, Hay, Breconshire.

— DEATH OF MR. WILLIAM HARRIS.—Mr. William Harris, for the last forty years head gardener at Canwick Hall, Lincoln, died there on the 6th inst. at the ripe age of eighty years. The deceased, who had been in failing health for several months, was well known and highly respected in the district. He was a good gardener and a kind hearted man, ever ready to assist and encourage those under him. He enjoyed the entire confidence and regard of his employers, C. C. Sibthorp, Esq., F.R.H.S., and Mrs. Sibthorp. The funeral took place on Thursday last in Canwick churchyard. The deceased's successor at Canwick Hall is Mr. G. Green.

— APPLE GOLDEN NOBLE.—For cooking purposes this is a very fine variety, and the surprise is that it gets so rarely a passing reference. It is true that among the overwhelming number even of good varieties some must go unnoticed, but in a fairly large collection this, to my mind, deserves a place. It is a regular bearer, not so heavy perhaps as some; but in this there is an advantage, because one is spared the trouble of thinning, and the fruits are individually larger, and consequently better in every respect. It has a tempting appearance in the depth of colour in its skin, is perfectly distinct, and an excellent cooking Apple. With me it is a midwinter sort, but in some soils it would keep till later in the winter.—S.

— BOUVARDIA PROPAGATION.—In a short paper on Bouvardias recently, the writer refers to the method of propagation by roots. I saw it in operation, and some of its results the other day at Woodhatch. Mr. Salter took down from a shelf several pots that had been filled with root cuttings but a fortnight previously, and there were shoots half an inch long, and just peeping out of the soil. A piece or two lifted out showed the portions of roots to be from 1 inch to 1½ inch in length, and laid into the soil fairly close together, then covered with a thin surface of fine sandy material. The breaks were not from the apex of the root cutting, like we see from Seakale roots, but from a root bud very near the apex. The method seems to be a peculiarly simple one, and to bring in plants of compact habit and very floriferous.—A.

— EUCHARIS CULTURE.—I send herewith a photograph of the Eucharis as growing at Ghyllbank, St. Helens. It was taken on February 8th by an amateur. It does not show a crowd of blooms, as every one expanded was cut two days previously. I was much interested in Mr. Shalford's article in the *Journal of Horticulture* for March 2nd, although the methods that he recommends for growing them differ in several points from my system. I make no attempt at resting, either by cooler or drier treatment, and no manure or stimulant of any kind is used. They are repotted about every four years, but I think three years long enough. Of course by feeding they might be kept in good condition much longer. I also send photo of a single flower stem with a ten-petalled flower on it. It is the only bloom of abnormal form among about 2700 that I have cut since Christmas.—J. J., *Lancashire*. [The plants are, it is easy to see, admirably grown, and must be a pleasure to the cultivator. Unfortunately we are unable to reproduce the photographs that have been sent. The ten petalled flower is very attractive.]

— PLANTING FRUIT TREES.—Would that we could have the pleasure of reading a few more notes from the pen of our esteemed friend Mr. E. Luckhurst, for he is so thoroughly practical. I read with much interest his few fruit planting notes, under that eminently alliterative title of the three F's, and felt how thoroughly he was right in protesting against the old fallacy that southern raised trees—and the remark applies to trees and shrubs generally, as well as to fruit trees—are not hardy enough to plant northwards. So far from that being the case, they should be really hardier, seeing that under southern suns and on warmer soils both wood and roots get harder and more matured than can be the case in the north. But generally, I think, when ordering trees it is best not to go farther from home than is absolutely needful, because trees are often, over long journeys, some three or four days on the road, and if most carefully packed the roots get dried. I have often thought that failure on the part of amateurs after planting has largely resulted from not having taken the trouble to soak the roots in water some twenty-four hours before planting. Of course it often happens that the desired trees can only be obtained at some remote nursery, and it is specially desirable then the roots be well soaked before being planted. That nurserymen can plant in their nurseries so late as April and even May, of many things with so much success is largely due to the fact that the tree and shrub roots are so little exposed, and therefore are not dried ere being replanted.—PRACTICE.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
March.										
Sunday .. 5	N. N. E.	deg. 35.8	deg. 33.3	deg. 41.5	deg. 29.5	ins. —	deg. 38.3	deg. 40.2	deg. 43.6	deg. 20.3
Monday .. 6	S. S. E.	39.4	34.5	44.9	23.9	—	36.7	40.1	43.3	16.0
Tuesday .. 7	S. S. W.	37.8	32.4	50.3	22.9	—	36.5	39.9	43.5	15.0
Wed'sday 8	W. S. W.	40.4	38.6	50.2	34.9	0.08	37.4	39.9	43.2	23.2
Thursday 9	S. S. W.	41.0	39.3	49.1	38.5	—	39.9	40.3	43.2	31.8
Friday .. 10	W. S. W.	41.4	38.8	53.3	29.5	—	39.3	41.1	43.2	20.2
Saturday 11	N. N. W.	41.8	41.6	53.1	32.6	—	40.2	41.4	43.2	24.5
MEANS ..		39.7	36.9	48.9	30.3	Total 0.08	38.3	40.4	43.3	21.6

The week has been remarkable for clear, bright, spring-like weather. Once only has there been any rain—viz, on the evening of the 8th.

— FEBRUARY WEATHER AT HODSOCK PRIORY.—Mean temperature 40°. Maximum in the screen, 60° on the 10th; minimum in the screen, 19.9° on the 27th; minimum on the grass, 10.3° on the 28th. Number of frosts—in the shade, fourteen; on the grass, twenty-two. Sunshine seventy-one hours, or 26 per cent. of the possible duration. Difference from average, + 11. Rainfall, 1.47 inches. Difference from average, - 0.19. Rain fell on ten days. Rainfall from January 1st, 3.37 inches. Difference from average, - 0.09. Some stormy and showery weather from the 6th to the 15th, the rest of the month fine with a good many white frosts.—J. MALLENDER.

— FEBRUARY WEATHER AT DOWLAIS.—Rainfall, 6.04 inches, which fell on fourteen days; greatest fall, 1.31 inch on the 9th. Temperature: mean maximum, 46.285°; highest reading, 60° on the 19th; mean minimum, 30.142°; lowest reading, 16° on the 2nd. Below freezing point on seventeen days. The wind was in the E. and N.E. on seventeen days, and in the S.W. on five days. There were nine sunless days. A very stormy month until the 15th. Heavy snowstorms on the 4th, 5th, and 6th, fully 15 inches of snow falling on those dates; but the rain soon cleared it away. Thunderstorm, accompanied by heavy rain, on the 7th. A furious gale of wind on the 12th, and very heavy hailstorms on the 13th. Since the 25th we have had brilliant sun in the day with very sharp frosts at night, with no rainfall, and wind very quiet.—WM. MABBOTT.

— AUCUBA FERTILISATION.—Few things serve to show how subtle and volatile are pollen grains than do Aucubas, for fertilisation of flowers seems absolutely certain every year when a pollen-producing plant is thirty, forty, or even more yards away. It is possible that insects aid in this interesting result, but it almost seems as if the atmosphere was the chief agent. Certainly we have made a wonderful addition to the beauty of what was once an uninteresting race of shrubs by the introduction to gardens of the male form. I notice that while berries are showing abundantly in all directions, they seem to be later than usual in colouring. Perhaps the flowering period was last year later than usual, or the drought may have retarded fecundation. No doubt, also, fruiting has helped to dwarf them, as huge specimens are now seldom seen.—OBSERVER.

— ACACIA VERTICILLATA.—In large cool conservatories or greenhouses where space can be given for planting out Acacias, there are a number of species which could be grown with the greatest possible success that thrive indifferently if confined in pots. The above mentioned is one of this number, and it is difficult to conceive the beauty of specimens 15 to 20 feet high by 8 or 10 feet through, smothered with their pretty yellow blossoms. The flowers of this species are borne in short cylindrical racemes all over the previous year's growth. The colour varies on different plants from pale to bright yellow. It is extremely easy to cultivate, for if planted out in a well-drained border of half peat and half loam, there will be found to be little more trouble connected with it than keeping it well supplied with water and air while growing, and keeping a little dry during winter. By this treatment a splendid supply of flowers may be expected during February and March. It is a good plan to cut it back fairly hard after flowering, as young growths will then be made from 3 to 5 feet long, which, when covered with flowers, will be found useful where quantities of cut flowers are wanted.—D. K.

— MAIDENHEAD GARDENERS' SOCIETY.—At the fortnightly meeting of this Society on the 23rd ult. Mr. Roberts of Ealing read a very interesting paper entitled, "A Chat on Exhibitions," and Mr. Stone, Maidenhead, read a paper "On Some of the Medical Uses of Herbs," which were very much appreciated by the members. Mr. Ingamells was in the chair. A vote of thanks was passed to each essayist. There was a large attendance, and several new members were enrolled.—W. M.

— NATIVE GUANO.—For some considerable time the Native Guano Company has favoured us early in each year with a pamphlet of letters testifying to the value of Native Guano for manurial purposes. The one sent this season embodies upwards of sixty pages, and contains testimonials from every part of the country. Some of the writers refer to certain specific crops, and others take a wider base and speak in general terms. There is throughout a striking consensus of opinion of the utility of the material, and after perusing them no one can be surprised at its popularity. The address of the Native Guano Co. is 29, New Bridge Street, Blackfriars.

— ERICAS HYEMALIS AND WILLMOREI.—It may be interesting to remark, *apropos* of the origin of the double forms of *Pelargonium* as mentioned in "The History of the *Pelargonium*" in the *Journal* (page 172), and relative to Willmore's Surprise, that those popular garden hybrid Heaths (*Ericas hyemalis* and *Willmorei*) were, I believe, raised by Mr. Willmore's gardener at Strawberry Vale, Edgbaston, and consequently controverting the inclusion of the latter in the *Index Kewensis* as a species. It would, however, be interesting to learn the real origin of the varieties in question, and I have myself made repeated inquiries, but without success, and now I fear their further history is buried in the past. Can any of the other correspondents of the *Journal* afford the required information?—W. G.

— PITTOSPORUM CRASSIFOLIUM.—A few plants of this New Zealand species will be found useful for the greenhouse in spring, as in addition to flowering freely during February and March it makes a good foliage plant to use among plants that have been forced into flower before foliage appears. It has a compact sturdy habit, and makes good sized plants in comparatively small pots. The leaves are 2 to 2½ inches long, obovate, deep glossy green on the upper surface, and covered with a thick white tomentum on the under side. The flowers are reddish purple and drooping. A figure of it is given in the "Bot. Mag.," t. 5978. In the south-western counties it is hardy, and about London it can be grown outside if given the protection of a wall.—W. D.

— READING GARDENERS' ASSOCIATION.—A very interesting lecture on "The Onion" was given by Mr. A. Dean of Kingston-on-Thames, on Monday evening, before the members of this Society, the President, Mr. C. B. Stevens, presiding over a good attendance of members. The classification of the Onion, its various divisions, and the different varieties, were treated in a very able manner, followed by many practical hints on the preparation of the ground, manuring, time of sowing, and a few remarks on the enemies of the Onion and their treatment, judging at shows, and the uses of this most useful vegetable. A discussion followed. A vote of thanks was accorded to Mr. Dean for his paper. The exhibits included some well kept specimens of Onions, splendid Freesias, and several vases of blooms of *Primula obconica*.

— GREAT SOIL MAKERS.—Glaciers were and are important agencies in soil making and distribution. Whenever the climatic conditions of a country are such that more snow and ice are formed in winter than melts in summer, this surplus must accumulate year by year. After a while this pile of ice and snow becomes so deep and heavy that a great pressure is exerted on the lower layers and the ice begins to flow from underneath. The additions on the top of the pile increase the weight and cause the flow to continue. This was precisely the condition of affairs over northern regions in earlier geologic times. This ice flow extended down over the northern portion of the United States as far as the Ohio river. As this ice flow advanced it ground up and pulverised everything in its path. In fact, it is claimed by some authorities that the great lakes were scooped out by this gigantic ice flow. When the ice sheet reached down into our warmer climate it began to thaw. As it thawed and receded vast quantities of soil, boulders and debris were deposited. The region over which this deposit took place is known as the "drift area," and the land over which it did not extend is known as the "driftless area." Drift soil is the most fertile soil that we know, because it is deep and composed of a large variety of elements, while the driftless soil has only the elements that are to be found in the underlying rocks, which in many cases are near the surface.—W. D. GIBBS (in "American Agriculturist.")

— FARMERS AND FRUIT CULTURE.—Certainly there is great need for improved methods of fruit culture on farms, for one seldom sees fruit trees and bushes doing other than existing in such places, and not cultivated. But then, how can it be otherwise unless the farmer himself is a gardener also, and will attend to his trees and bushes, or else he is in such affluent circumstances that he can afford to keep a practical gardener, and thus have all his garden well cared for as well as his trees. But it would be absurd to assume that an ordinary agricultural labourer could look after the garden properly, much less attend to the trees and bushes. Evidently farmers should have their sons taught gardening as well as agriculture, especially fruit culture. But if the sons prefer to be hunting, sporting, or otherwise wasting valuable hours, then there is no hope whatever that the agriculturist can ever develop into a satisfactory fruit grower. But under no circumstances would I advise the farmer embarking in fruit culture as a trading speculation, unless his proclivities were warmly in that direction. Such knowledge as may suffice to grow good field crops is of no use when fruit culture is concerned. To do that with success and profit a farmer must have long experience in the work, and that can only be obtained in fruit nurseries, in good private gardens, and in special fruit gardens. He must also have the widest knowledge of packing, selecting, selling, and all the essentials to marketing work. How is he to acquire all this knowledge consonant with acquiring a full knowledge of agriculture? But, after all, fruit culture for market is a distinct vocation, and is so much more prosperous and successful when undertaken by specialists who through long experience have learned to know what are all the essentials to that success, without which no such enterprise can be profitable.—A. D.

NOTES ON FORCING FIGS.

EARLIEST TREES IN POTS.

EARLY Violet and St. John's varieties that were started in gentle bottom heat in November are now beginning to take their last swelling of the fruit for ripening; and to insure flavour, also to prevent "spot," a drier condition of the atmosphere and a high temperature, with increased ventilation on fine days, is desirable. To check red spider it is advisable to paint the hot-water pipes with sulphur. The larger fruited varieties, however, have not the fruit sufficiently forward to admit of the relatively dry treatment without prejudice to their crops. Anything approaching dryness at the roots must be avoided, yet lessened supplies are needed than when the fruit is swelling. Brown Turkey, Pingo de Mel, and similar varieties should have good supplies of tepid liquid manure twice a week, and the top-dressings be replenished, lumpy manure absorbing moisture when the trees are syringed, and gives off genial vapour for some time afterwards. Syringe twice a day when fine, once only when the weather is dull, the second syringing being given in time for the foliage to become fairly dry before night. Maintain a night temperature of 65° when mild, 70° to 75° by day, and a heat ranging from 75° to 85° with sun. Stop and thin the side shoots, as Figs enjoy light, full exposure to sunshine, training terminals forward where space admits or there is need to preserve the symmetry, always guarding against overcrowding.

SUCCESSION HOUSES.

Trees in borders make very rapid growth, hence the necessity of frequent attention in stopping the shoots at the fifth or sixth leaf. As a well-developed spur, as such shoots are called, gives the best results in the second crop when a number of shoots appear together, they may all be removed but one, so as to cause it to be sturdy and fruitful. Train and regulate the terminals as required. The trees require liberal supplies of water through a good, but not heavy mulching of manure; or supply liquid manure. Syringe twice a day unless dull, when once suffices, or not that when the weather is close and moist, but damp the paths and walls occasionally, and again moisten the mulching when it becomes dry. This is better than keeping it constantly saturated. Ventilate freely in the early part of the day, but maintain a temperature of 75° to 85° from sun heat through the day, and close with a brisk heat and plenty of moisture about three o'clock in the afternoon. Maintain a night temperature of 60° to 65°, and 65° to 70° on dull days, with a little ventilation.

LATE HOUSES.

Figs ripen one crop in a season in unheated houses, but late varieties require fire heat to ripen the fruit well. Negro Largo is one of the best late Figs. The house must have a full exposure to the south. Well drained, narrow, inside borders are best. The growths should be trained about 16 inches from the glass. Prune the trees, and dress them with an insecticide, being careful not to injure the embryonic Figs or break the points of the shoots. Supply water so as to thoroughly moisten the soil, and keep the trees dormant as long as possible; but when they begin to grow afford generous treatment, admitting air soon, and closing early in the afternoon so as to husband the sun heat. Avoid, however, a close atmosphere, as that hinders the proper formation of the foliage, and too hasty treatment may cause the fruit to fall.

RAISING YOUNG TREES.

This is a good time to propagate young plants from cuttings. Select shoots from 5 to 6 inches in length, with a heel of last year's wood

attached, and remove all the eyes from the part to be inserted in the soil. This may consist of good fibrous loam with a sixth of old mortar rubbish incorporated. They root freely in a bottom heat of 75° to 80°. For general purposes Brown Turkey is the best variety, but Pingo de Mel is a very desirable one, giving good results in the first crop. For very early forcing Early Violet and St. John's are excellent varieties.—GROWER.

GROWING ZINNIAS.

PROCURE seed of double Zinnias from a reliable firm, sow it at the right time, and give the plants about half the attention required to prepare Zonal Pelargoniums for bedding; plant them in a well prepared bed by themselves, and they will repay the cultivator with a rich and continuous harvest of bloom, by the side of which Pelargoniums will be tame and carpet bedding flat. Not only so, he will be able to "cut and come again," for few flowers last so well when cut as Zinnias, and if arranged so as to take off their rather stiff formality they are very effective for dressing flower stands.

At first sight it seems surprising that plants of this nature are not more largely grown, but is it not a fact that many beautiful easily grown plants and flowers have often to give place to those which are much more difficult and expensive to grow, but which, in many cases, are far less effective and profitable? The reason is not far to seek, for it is often because they are easily managed that they are left to themselves until what should have been a grand display becomes an eyesore, such as a Zinnia, for instance, with a small solitary flower on the top of a thin nearly leafless stem, which requires a stake to prevent it falling.

I have tried every phase of bedding—carpet, subtropical, succulent, ribbon borders, and mixed beds, but although all have done well, none has been so much admired as a bed of Zinnias; indeed, although they were far less trouble and expense to prepare I had nothing to equal them either for use or beauty. The seeds were sown on a slight hotbed early in April, the plants were pricked off into a cold frame in May, and planted on a large circular bed 6 inches apart (they should have been 9 inches apart) in June, where from the first week in July they formed a rich mass containing many shades and colours of bloom.

For the guidance of beginners I will give more detailed instruction on the cultivation of Zinnias, which may be safely applied to many beautiful annuals. Those having frames or other means of protection should make a slight hotbed with leaves or well sweetened stable manure the first week in April. The frame may be placed on the bed as soon as made, and 6 inches of compost, consisting of equal parts of loam, leaf mould, and sand, laid over the bed inside the frame, and should be well pressed down. Draw drills 3 inches apart and 1 inch deep, in which the seeds should be thinly sown and covered with fine light soil sifted for the purpose. If each colour be kept separate and duly labelled it will be of great advantage, as then the colours can be more artistically arranged in their permanent quarters.

The light should be kept closed until the seedlings appear through the soil, when on every favourable opportunity they must have a little air until they are in rough leaf, after which on warm days remove the light, the object being to produce strong sturdy plants. Through April and May, however, we often have hot sunshine with cold winds. On no account must the light come off on such occasions, but give a little ventilation, or if very rough and cold keep the frame closed. Plenty of air will get under the glass to prevent injury, but if the sun be very hot a slight shade will be better than admitting the cold wind. Set the frame on a hard base, put in 2 inches of leaves and 9 inches of the following compost—three parts of loam, one part leaf mould, one part Mushroom bed refuse, and one part sand, thoroughly mixed and pressed down firmly. Carefully prick off the seedling plants into this frame 4 inches apart, giving a good watering with warm water through a rose can. Keep them close and shaded from sunshine for a few days, then admit a little air, gradually increasing it until the light can be removed through the day, which may be done in about fourteen days after pricking off. The last week in May the light should be left off day and night, always remembering what has been said about cold winds, for they sometimes pay us their unwelcome visits far into June.

The first or second week in June, according to the weather, the plants should be transferred to their flowering quarters, which to do them justice must be a well manured, deeply dug bed, but of course plants prepared as above will make a grand display in mixed beds or borders if not too much smothered by neighbours. Give the plants in the frame a good watering a few hours before lifting them; they will then carry clumps of earth, and may be transplanted without any check if carefully handled. Plant them 9 inches apart, arrange the colours according to taste, and give a good watering to settle the soil round the roots; the cultivator will then, in due time, be rewarded with a rich and continuous display of large flowers and a general effect such as is seldom produced by plants requiring a more troublesome and costly preparation. If 3 inches of cocoa-nut fibre refuse, or the sifted material of a spent Mushroom bed, be laid over the soil it will keep the roots cool and moist, save much watering, and benefit the plants considerably.

The following annuals may be grown to perfection if treated according to the above directions, only, being for the most part hardier, they may be planted out earlier, and the smaller growing ones closer together:—Asters, Ten-week-Stocks, Helichrysums, Salpiglossis, Petunias, Phlox Drummondii, and Portulacas, all of which will richly reward the cultivator if liberally treated.—R. J.

GREENHOUSE CLIMBERS.

No greenhouse or conservatory of any pretensions whatever can be said to be complete unless it is furnished with a good selection of climbers. To lofty structures especially they add a grace and elegance which is very pleasing where the selection has been made judiciously, only using such as are best adapted to the construction of the house. For instance, a plant of *Tacsonia Van Volxemi* or *Clematis indivisa lobata* would be entirely out of place in a low structure, but would be seen to advantage in a lofty house. In the following notes our aim is to help such as may be contemplating planting a few climbers, and who have a difficulty in deciding what to plant.

Sometimes it is desirable to cover the back wall of a greenhouse. We will therefore endeavour in the first place to mention one or two climbers which we have found answer this purpose admirably. But before enumerating varieties we would mention that in all cases where it is at all possible the best plan is to have prepared borders in which to insert the plants. They succeed so much better under this system and require a minimum of attention.

For a moderately high wall the Silver Wattle, *Acacia dealbata*, makes a beautiful covering. The foliage is neat and pretty, silvery grey in colour, and the bright yellow flowers are produced in profusion early in the spring. A light rich compost of fibrous loam, leaf mould, and sand made rather firm suits this Australian plant, which also delights in abundance of water at the roots. Pruning should be done immediately after flowering, and consists in cutting back long shoots and thinning out where crowded.

Then the Cherry Pie (*Heliotropium peruvianum*) succeeds on the back wall of the greenhouse where a maximum of light is obtained. In this position it will bloom perpetually, and there are few flowers which are more appreciated, especially by ladies, on account of the delicious perfume. The plants must annually be pruned in the month of February, cutting the preceding season's growths back to within one or two eyes of the main stem in the same manner in which Gooseberries are pruned. They will soon produce fresh growth, and in a short time completely cover the wall. The Heliotrope is not very particular as to soil; any fairly good light loam will suit it capitally. We have known baskets of flowers gathered throughout the summer and autumn from a single plant, and even in the dull winter months a fair amount have been got.

Cestrum elegans is another plant which is splendidly suited for back walls or pillars in the greenhouse. Although it is a native of Mexico it succeeds very well in a greenhouse temperature, and is one of those plants upon which at all seasons one can depend on finding at least a few flowers. The flowering season, however, is during summer, when it produces abundance of large cymes or clusters of reddish flowers, which hang like great pendants amidst the bright green foliage. This plant requires liberal treatment, a rich soil, and abundant supplies of liquid manure during its season of growth. Prune early in the year, cutting away all weak growth and shortening back others in such a way that the plant will be well furnished to the base with flower-producing growths. *Habrothamnus elegans* is another name by which it is known.

Amongst those which are adapted to training on the roof of the conservatory, perhaps *Lapagerias* stand unrivalled. The *Lapageria* is a native of Chili, whence it was introduced in the year 1847, and was named after a French Empress, Josephine Lapagerie. Perhaps few flowers are more admired than this, especially the white variety, which looks extremely chaste hanging amidst the dark green, leathery foliage. It should be accorded a slight shade during bright sunny weather, as the young leaves are liable to be burnt when fully exposed. After flowering, all exhausted growths should be removed to make room for the young shoots; but further than this, little pruning is needful. Equal parts of good fibrous peat and fibrous loam, with a free admixture of sharp sand and a quantity of broken bricks and chareoal, will be found a good rooting medium for this beautiful climber.

During the growing season water must be given unstintingly, and at no season should the soil be allowed to get dry, consequently the borders must be carefully and amply drained. When young shoots are pushing up from the base a constant watch must be kept, as snails are particularly fond of the tender points. The blooms last a long time in perfection, and the flowering period extends over months. The red and white varieties when allowed to intermix look very beautiful, the two colours making a chaste combination.

Tacsonia Van Volxemi is a very pretty and characteristic plant for draping the roofs of lofty houses. Its beautiful scarlet flowers have a graceful and refined appearance, hanging by the long slender foot-stalks. It is a rapid grower, and covers a large space in a very short time. The flowers are produced plentifully in the late summer and autumn. Then there is the *Bougainvillea*, another pretty greenhouse climber, which should find a place even in a small collection. The bracts are the principal feature, and these are very beautiful indeed, deep heliotrope or lilac in colour, and produced in lavish

abundance. No attempt must be made to train the *Bougainvillea* in any hard and fast way, but allow it to ramble freely, as under this style it produces its flowers more freely, and is also seen to greater advantage. Good turfy loam, with a little leaf mould and sand added, makes an excellent compost in which to plant it. Abundance of water, with frequent applications of manure during summer, tend to produce the best results. Keep drier during winter, and induce the plant to rest. In February prune hard in cutting away all weak growths and spurring others close in like Gooseberries.

Another very fine climber is *Clematis indivisa lobata*, a native of the Antipodes, which yields a profusion of starry snow-white flowers early in the spring. It is a rapid grower, and requires ample space to ramble. The flowers are considerably smaller than those of the well-known hardy varieties, but the immense quantities produced make up for any lack in size of the individual blossoms.

The foregoing do not by any means exhaust the list of greenhouse climbers, but in selecting them we have endeavoured to have as varied and as representative a choice, both in form and in colour, as we could.—ALEYN.

THUNBERGIA HARRISI.

No. "L. Row," *Thunbergia Harrisi* is not by any means of recent introduction, and it is probable that you have occasionally seen the plant not in flower, and consequently have not had your attention particularly drawn to it. It was introduced from the East Indies about forty-five years ago, and was some years ago accorded a first-class certificate by the Royal Horticultural Society when exhibited from the gardens of Lady Theodora Guest at Henstridge. The flowers (fig. 55) are large and very showy, being purplish blue with a pale yellow suffusion in the throat. They are freely produced in racemes, and are sufficiently beautiful to warrant the inclusion of at least one plant in every stove. It requires precisely similar treatment to other stove *Thunbergias*, and if well grown and kept free from insect pests, it will flower in the late summer and be sure of considerable admiration.

NOBLE-FOLIAGED PLANTS.

APART from Palms, with all the diversification of grace, elegance, or majesty characterising the great family, there are certain distinguished members of the vegetable kingdom which, by their power of imparting a tropical tone to our conservatories, hold a unique position among cultivated plants. Much depends, however, upon the adaptation of natural freedom to them in their artificial surroundings, for without such consideration it is possible to tame them into comparative insignificance. The conservatory as a show house—viz., a general repository absorbing such things from the glass department as tend to keep it gay—does not, in the formal arrangement of an heterogeneous gathering, lend itself to the effective display of our noble-foliaged plants. Their disposal for the best effect requires that more subtle and harmonious scheme in which no arrangement is apparent—in short, the reproduction in miniature of the handiwork of Nature in her happiest moods. In illustration, the thought arises, when viewing a photograph or picture of some pretty peep in sunnier lands, that could our conservatory be lifted, as one lifts a cap-glass, and popped down upon a bit of the best of what is felt to be so good, the ideal in this direction would be captured. There is something peculiarly graceful and fascinating in these choice bits of Nature when introduced to the homelier surroundings of a cooler clime, but it requires the co-operation of an artistic eye, with the gardening hand, to do them justice, to which pots and primness are fatal.

In brief, however, it is chiefly to the plants our subject pertains, although the development, rather than the curtailment, of their natural charms seems inseparably connected with conservatory culture. *Musa ensete*, if not strictly a tropical plant, holds a prominent place from its beauty of foliage, dignified habit, and amenity to culture. Unlike its first cousin, *M. Cavendishi*, the Chinese Banana, it does not produce suckers, hence this necessitates its reproduction by seeds. At first sight some little difficulty may appear to attend this method of propagation, for it is not easy to obtain the seeds, and when to hand they look more like freaks of Nature than the dormant germs of this noble foliaged plant. Late in the autumn of 1897 I was able to procure, through one of our home seed merchants, from the house of Vilmorin, of Paris, 100 seeds, which were at once put into a tin dish of well saturated Jadoo fibre, and placed direct on the hot-water pipes of a stove-house. In some six weeks vegetation commenced, and as the plants appeared they were transferred to thumb pots, the Jadoo fibre, enlivened by some sharp silver sand, still being used and repeated in succeeding shifts until 8-inch pots were necessary.

Thirty healthy plants in all were raised from the 100 seeds, and possibly a higher percentage would have shown had we persevered

with them, but the quantity obtained was more than sufficient for our requirements. One thing was noticed, however—viz., that the last plants taken from the seed pan were of low vitality, and remained weak and puny for some time. All are now, in less than eighteen months from sowing, strong healthy plants, 3 feet high, with stout stems, and having long since been root-bound are about to be transferred into oak tubs 16 inches deep by 16 inches across the top. These tubs, having been neatly covered with virgin cork, are intended for various vantage points of the rockwork in a large conservatory,

attaching itself to any bare bit of damp wall, similar in manner to *Ficus repens*. In its peculiar Aroid-like inflorescence and singularly striking fruit, springing erect through the large leathery leaves from horizontal stems, the *Monstera* is *par excellence* one of the handsomest, and probably the most interesting plant for the purpose of beautifying a warm conservatory.

Totally distinct in habit and appearance, yet equally handsome, is the *Papyrus*, a plant rarely seen outside of botanical collections. *Papyrus antiquorum* is indeed a plant worthy of place wherever the

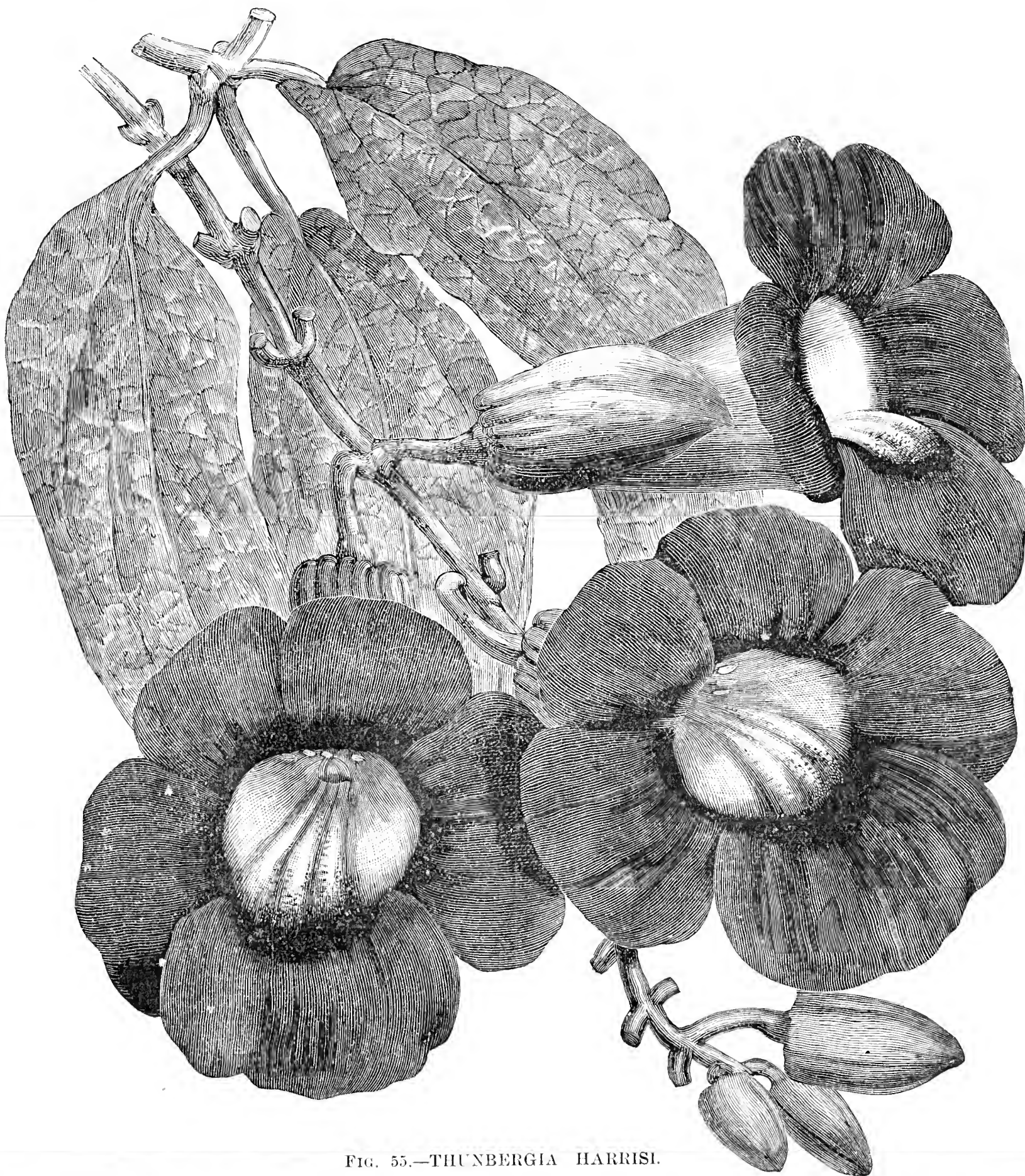


FIG. 55.—THUNBERGIA HARRISI.

and the plants thus treated are readily adapted to temporary use in the dwelling house. Musas, it must be admitted, are not, in a sense, good house plants, but there is a charm in their fresh green noble foliage, heartily welcomed upon special occasions.

Monstera deliciosa, in its quaintly cut handsome foliage, interesting habit, and luscious fruit, has few rivals, and one wonders that it is so rarely met with. True it is a tropical plant, but nevertheless flourishes under semi-tropical treatment, and objects not to a minimum temperature of 50° during the dark days of winter. Planted well up in the rockwork attached to a back wall it enjoys the position if fairly warm and moist, and rambles away at its own sweet will, eventually

desire exists to give a tropical tone and that one touch of nature so often conspicuous by its absence from the conservatory. Enjoying, as it does, the humidity of stove treatment, it is not wholly exclusive in its requirements, for in one place within touch it has been successfully introduced into what was an orangery, now converted into a winter garden, where the desideratum of a minimum temperature of 50° is not always maintained during winter. Springing from an informal bed of rockwork, all but hidden by a natural growth of humbler things, this giant *Cyperus* appears to be particularly happy in the position. Given the presence of its element—water—in the form of a tiny pool or miniature bog, which is appropriate to its taste

as well as appearance, we have a happy illustration of the fitness of things to a purpose.

The fine-foliaged Anthuriums, not so often seen as of yore, permit of little laxity in the way of temperature. Strictly stove plants and fairly revelling in a kind of Sierra Leone heat and humidity, they require a tropical house to develop their beauty. Here, however, they are grand objects, more especially if planted in a rock-pocket upon some vantage point. There are few finer objects than a well-grown plant of the more recently introduced Anthurium Veitchi; and although the planting out process of so choice a plant may commend itself to few, the cork-covered tub appears to be infinitely preferable to pot culture. This plant, nevertheless, is well able to conceal, with its long Zulu shield-like leaves, any receptacle it may be grown in. If memory serves me rightly, a plant in its prime at Straffan House, Kildare, had thirty leaves, the later developed one being 5½ feet in length. A fine, bold habited Rambler is the great Passion flower, *P. quadrangularis*, and quite worthy of inclusion in this category.

Giants of the Fern tribe appear to be of too distinguished an order of merit not to have their claims separately considered, hence but a passing thought is given to them here; or is it desirable to enumerate a host of interesting and beautiful foliage plants generally well known and frequently seen? Some gardens there are which seem almost to suffer from an *embarras des richesses* in this direction—viz., overcrowding being detrimental to the best effect. From a botanical point of view, or from a gardening point of view, it is good so far as it goes, but it seldom goes far enough to reach what many aim at, and not a few miss. Nature is the great teacher, and inculcates few finer lessons than where, with some bits of half-draped rock and a few noble foliaged plants, she has “allured to brighter worlds and led the way.”—K., *Dublin*.

PLANTING POTATOES.

THE spell of frosty weather lately experienced has in a great measure pulverised the surface of previously broken up land, and left it in a condition, when sufficiently dried by sun and wind, for readily receiving the tubers of Potatoes. Heavy land is much benefited by frost, as nothing tends to break down the adherent particles so much. After the frost has passed away, and drying winds have extracted the moisture which causes the sticky condition following frost, the land may with advantage be forked over, so as to bring it into a still more friable condition. Soil in a lumpy state is not conducive to a good start, either with roots or seeds, and time spent in thoroughly breaking it down adds greatly to ease in planting, as well as subsequent success with the crop.

The earliest crops of Potatoes with outside culture are best grown on warm sheltered borders, where the soil is light and friable and readily warmed by the sun. Such soil, if deeply cultivated and enriched a few weeks before with a fair amount of decomposed manure and light sandy potting soil, will retain moisture enough to carry the crop to an advanced stage, and with the aid of natural moisture, which may reasonably be expected, a good crop of tubers will be dug in June. For this crop the Ashleaf or kidney varieties are the best.

Their growth may be materially forwarded by sprouting the tubers before planting. This is effected by placing the tubers, rose end upwards, in shallow boxes set close to the glass in a cool house. If this is done, a delay of a week or two in planting will be of little consequence, as care in planting will soon be rewarded in seeing growths above the soil. Plant 4 inches deep, in drills 2 feet apart, and the sets a foot distance. Attention must be given to protect from frost, as the growths are susceptible to injury when May frosts occur. Dry litter spread over them each night when frost is imminent is perhaps the best protection. As soon as high enough soil should be drawn to them.

Successional tubers ought to be planted in a similar position, or failing that, in the open quarters where the ground is in exceptionally good tilth. Although not of deep rooting habit Potatoes seem to succeed better where the soil is deep rather than shallow. Shallow soil cannot long retain moisture, while deeper soil does, and also draws fresh supplies from the subsoil as that at the surface evaporates or is exhausted by the needs of crops.

Drilling is the best method of planting Potatoes. Draw the drills 4 to 6 inches deep, and at the required distance needed by the variety. The early kidney varieties do well in rows 2 feet apart. Stronger growing varieties should be placed 2 feet 6 inches to 3 feet from row to row. Drills which cannot readily be formed with the hoe should be cut with the spade. The use of the dibber for planting Potatoes is not to be recommended. The sets are liable to be suspended in the holes, which vary in depth if not carefully formed.

Medium-sized whole tubers are much to be preferred. If large sets are cut a few good eyes must be retained to each section. Before planting allow the cut parts to dry, dusting them with a little lime.

The whole of March and the first part of April include the best

times for Potato planting. Choose periods when the soil is dry on the surface, so that the ground is not made into a pasty condition by trampling on it when wet. In a dry state no harm whatever accrues from treading the soil, which if light is all the better for being firmed.—E. D. S.

TOMATO CULTURE.

(Continued from page 92.)

WHEN the young plants are grown with abundance of space at all stages, they form a sturdy base, close-jointed stems, well-developed leaves, and push laterals or axillary growths, so-called side shoots. In ordinary practice it is advised to remove the side shoots as they appear, in order “to direct the nourishment to the formation and maturation of the crop, instead of being expended, as it often is, in making superfluous growth.”—(MacIntosh’s “Practical Gardener.”) On this point there can be no question as to its advisability after the first trusses of flowers are formed and the fruits are set; but I am not at all convinced of its propriety until the plant shows for fruit formation.

If the plants are not required for trellises I think it is advisable to allow the side shoots to spring, and, unless very strong, remain until the first trusses for fruit appear. This secures a stout base, any laterals showing undue vigour being shortened to the joint nearest the stem. When the plant shows for fruit side growths may be closely rubbed out, thus directing the nourishment “to the formation and maturation of the crop.”

The Tomato, like the Potato, will grow in almost any medium. It appears to appreciate alluvial soils, and to detest heavy and wet land. The top 2 or 3 inches of pasture land, with its turf, unquestionably grows the healthiest plants, with the heaviest and cleanest produce. For enriching the turf, usually stacked until the herbage has been reduced, nothing answers better than stable or farmyard manure. The amount to be used depends, as well as the form, upon the nature of the soil. For light loam cow manure is preferred, as it is cool and moisture-holding, also closer in texture than other animal manures. Of it not more than one third should be added to the loam. Medium textured loams neither light nor heavy, will be sufficiently enriched by the addition of one-fourth of good farmyard manure, as they generally contain a considerable amount of organic matter. For strong loam horse or stable manure proves most suitable, not adding more than one-third.

The proportions may be varied according to the character of the loam, always having the manure at least half decayed, as it will then have heated, and be more or less freed from vegetable and animal pests. In olden time the manure was used comparatively fresh, placing it between the layers of turf in stacking in about the amounts quoted. Thus the whole mellowed together and formed an excellent blend. The practice hardly commends itself to present day requirements, especially in growing for market. The latter grower cannot always command turf, or even allow it to lie any considerable time, therefore mixes the manure with the soil some little time in advance of planting, and often too fresh. This I consider a mistake, for though more may be got out of it in the form of nitrogen there will be proportionately less available mineral matter, and the plants will grow more in the direction of eelworm and kindred ills than away from them.

The foregoing suggestions may be useful to the uninitiated, for the use of fresh manure mainly profits the plants by the nitrogen, while the other elements come into use too late to be correspondingly beneficial. It is preferable in most instances to rely on top-dressings of rich compost or manure and artificial fertilisers or liquid manure when the fruits commence swelling than to give a very rich soil previously, as this tends to induce too vigorous a growth for productiveness. This, however, depends upon the amount of compost, its firmness, amount of light or space, and management.—G. ABBEY.

(To be continued.)

A HINT ABOUT FUCHSIAS.—When attention is being given to old stock plants of Fuchsias in the way of cutting back and potting, it is well to give heed to the raising of young plants for summer flowering. To meet the demand of present day styles of decoration, small plants of graceful habit are required, and for this purpose Fuchsias raised from cuttings in the early spring are very useful. If young growths from the old stems are broken off and inserted in pots or boxes over a gentle bottom heat, they will root readily, and in due course may be placed in small pots and grown on shelves close to the glass. Before getting thoroughly root-bound remove them into 5-inch pots, and, if necessary, again into a larger size. Keep the main stem growing and supported by a neat stake. Side growths will be emitted from the axils of the leaves, and later on the whole or a portion of the plants can be grown in a cold frame. When in full bloom these small specimens are very effective and useful for various forms of decoration.—G. H.



N.C.S. AND INCURVED VARIETIES.

I FEAR, from "Sadoc's" note on page 142, he thinks I am unduly pushing The Egyptian as an incurved variety, but had he seen the blooms mentioned by me, also the flower of this variety which was awarded the prize for the best incurved at the November meeting of the Bristol and District Gardeners' Mutual Improvement Society, he must have admitted that it is possible to stage it in typical form. I am afraid I cannot offer better credentials for it than these. Of course locality may have something to do with it being seen to what I should say was perfection, it being a well known fact that some districts do not suit some varieties.

As to it being classed as a Japanese variety when introduced, I should attach slight importance to this, and, if I might be so bold, should advise "Sadoc" not to place too much confidence in growers' descriptions of varieties in their first season. Several varieties which were introduced as Japanese are now seen in a good percentage of winning incurved stands. If all the varieties which have any Japanese blood in them were excluded, and we returned to the incurveds of a few seasons back, would the section receive the support of the leading exhibitors who are in the habit of staging in classes for thirty-six incurved? I think not.

It is certainly a laudable object to maintain as high a standard as possible, but not to do it to the detriment of this class of Chrysanthemum; and whilst societies schedule classes for large numbers of incurved, and the public are craving for size, I see no way out of the difficulty but to admit these varieties. Many of our older varieties of incurved are admitted by growers to be deteriorating to such a degree that, if the class is not added to by such varieties, I am afraid we should be sometimes placed in a difficult position to compete in the larger classes.—J. WILKINSON, *Stoke Bishop, Bristol*.

THE VASE CLASS AT THE N.C.S. SHOW.

I WAS rather surprised to read Mr. Molyneux's remarks on this subject in your issue of February 23rd. I think he has overstated the difficulty of the task. Surely it is as difficult to exhibit sixty distinct varieties on a given date! Yet I think sixteen growers were able to do this latter at the Diamond Jubilee Exhibition. Most of the leading exhibitors grow from eight to twelve plants of some two dozen of the leading varieties, and it is a sorry testimony to our boasted knowledge of the Chrysanthemum if five blooms of twelve distinct varieties cannot be chosen from these. It is not necessary that the varieties should be new ones, and I think very few new ones will be good enough to be represented. Most competitors will rely on well known varieties, and will also grow a few extra plants of their favourites. So far from making the conditions easier, I would stipulate that not more than three white or three yellow varieties be shown, and only two of any other colour, and I should like to see the Japanese incurved represented, in say four varieties. It must be remembered that the prize is a special one, and worthy of special effort.—GROWER.

HULL CHRYSANTHEMUM SOCIETY.

THE schedule of the exhibition to be held in the Artillery Barracks, Hull, on November 15th and 16th of this year is just to hand, and continues, as heretofore, comprehensive in style and generous in its prize money. The classes number close upon fifty, and are so arranged as to meet the requirements of all growers, whether large or small. Numerous excellent prizes are offered, and we shall, no doubt, be safe in assuming that this will again prove one of the best exhibitions in the country. It is regrettable to observe that the financial statement shows a deficit of £49 10s. from the balance in hand at the beginning of last year, and we trust that the Committee's appeal for more support will be promptly and generously met by increased and more numerous subscriptions. The Society is one of the best managed in the kingdom, and is deserving of support on all hands. Messrs. E. Harland and Dixon continue as Honorary Secretaries, and most admirably do they carry out their duties.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

ON Wednesday evening, the 8th inst., Dr. Banham delivered a lecture in the Society's Room entitled "A few Chemical Points in Relation to Plant Culture." Commencing with a description of various soils, their advantages and disadvantages, he afterwards referred to the composition of plants and the manner in which plant foods should be

administered. The lecture was a most excellent one, and full of valuable information, much more in fact than is usually carried away from a meeting in the cranium of an ordinary individual. Unfortunately it was not taken down in shorthand, so that its real value to outsiders is lost for lack of the indispensable reporter.

The members' exhibits were Cinerarias for the professionals and bulbs for the amateurs. In the latter section the lecturer (Dr. Banham) carried off first honours.

The meeting closed with a vote of thanks to the lecturer. Mr. T. Gartery occupied the chair.—J. H. S.

THE BEST PEACHES.

I AM pleased to note that two such sterling cultivators as Mr. D. Thomson and Mr. E. Molyneux have contributed exceedingly interesting notes on this subject, which is one worthy of being thrashed out, as we have now many varieties to select from, and all cultivators desire to grow only the best. On page 148 Mr. Thomson fully corroborates my idea that Noblesse is a variety which requires lime in considerable quantities to insure real success, and a useful hint has been elicited as to the conditions under which so noted a fruit grower produced this fine Peach in perfect condition, both in regard to free cropping qualities as well as size of individual fruits. Any Peach tree which I found to be a shy cropper I should at once apply lime to. In the summer by boring holes in the border, filling them with air-slaked lime, scattering some over the whole surface of the border as well, and then watering it in; in the autumn or winter by mixing lime freely with the top-dressing.

Mr. Thomson has hit me very closely by suggesting Dymond as a substitute for Royal George when the latter is subject to mildew. When penning my notes I hesitated some moments as to whether I could not include Dymond in my six, as it is a variety good in almost every way, and if I had named seven Dymond would have made up the number. My reason for not including it was, that although it is one of the surest croppers and colours splendidly, the slight depression at the crown of the fruit is its one weak point.

On page 174 Mr. Molyneux mentions the case of a market grower who has discarded Royal George on account of its susceptibility to mildew. I have great faith in the market men, as the question of £ s. d. quickly causes them to root out any plant, tree, or flower which shows a weak point. If I found mildew troublesome I should follow the same course with Royal George or any other variety, but so far I have only once experienced any difficulty in the matter. That was about fifteen years ago, when foreman at Preston Hall, in Kent. In the early house there was a splendid tree of Royal George, and on one side of it mildew often put in an appearance, but this was invariably checked at once, and seldom gave further trouble.

I cannot see my way to cut out Alexander from the best three early varieties for the reason which Mr. Molyneux gives, as although the flavour is not quite first-rate it is the earliest variety grown; that means much in private and market gardens. In regard to Walburton's Late Admirable, I have never found the flavour passable when grown in a late house. Mr. Inglefield of Tedworth, in Wilts, used to exhibit it in grand condition in August, and if I grew it at all it would be in a midseason house, for the sake of the splendid fruit it produces.—H. D.

WE have now for several years past given up the cultivation of Peaches on the open walls. They were at one period grown largely, but, owing to a succession of inclement seasons, little benefit was obtained from them. The one variety, however, that could always be depended on to carry a heavy crop of large fruit was Walburton Admirable, and if the autumn were fine it was of fair flavour. Could we depend on similar weather to that experienced last year the outdoor cultivation of Peaches in the North would be a success; but, as it has been in the past, so may we expect it to be in the future.

We now cultivate Peaches extensively under glass, and have thus exceptional opportunities of testing the different varieties. I may at once state the fact that the majority of them are grown with a view to making as high a price as possible. But this is not the sole aim, as quality and appearance must be studied for home consumption.

Bearing these facts in mind I do not consider "H. D." has made the best selection of varieties for that purpose. Alexander is recommended as a good commercial investment by obtaining ripe fruit in May. This is not our experience, as it is only of medium size, very thin in the skin, and a bad packer. If planted in a mixed house there is a difficulty in obtaining a full crop of fruit owing to the habit it has of dropping its buds. We find that a good midseason variety that ripens its fruit from the beginning to the end of June will make double the price in the open market to those bearing smaller fruit a month earlier in the season; consequently we are gradually working out this variety, and also Royal George, the varieties of Grosse Mignonne and Alexander Noblesse.

The two former varieties will be displaced by Crimson Galande, Bellegarde (probably the two best midseason Peaches in cultivation), Stirling Castle, Violette Hâtive, and Belle de Doué (a variety of Bellegarde). These are all small flowering and very free setters. They are of hardy constitution, carrying a heavy crop of large, well-coloured fruits, which are second to none for flavour, and may always be depended

on to make top prices in the market, as well as being appreciated on the dessert table.

Mr. Thomson refers to a dish of Noblesse exhibited by him in 1865, but this variety would now stand little chance against the varieties mentioned above. With reference to this variety an amusing incident happened not many years ago in a neighbouring county, where a large house party had assembled. Amongst them was a noted clerical gentleman who was much interested in gardening. The gardener was desirous of placing some of his best products on the table. The only Peaches ripe at that time were Noblesse, large fruit, but wanting in colour. He consulted the cook, who supplied him with some artificial colouring. The fruit was duly operated on with a fair amount of success, and was placed on the table. No remark was passed, and all was supposed to have gone well. But judge of the gardener's feelings the next morning on meeting the clergyman, who remarked, with a twinkle in his eye, "Those Peaches were very good, but don't you think you laid the colouring on rather too thick?"

I can corroborate all "H. D." says in favour of Sea Eagle, and if only one sort for late use is required this is the variety to plant. Barrington may always be relied on to carry a heavy crop of large well coloured fruit. In some soils this variety drops its fruit more than is desirable whilst stoning. It does not do so, however, on our limestone formation. I prefer the latter to Golden Eagle, which requires a long season of growth to grow it to perfection. Walburton Admirable is a shy cropper under glass.—S., *Yorks.*

HAVING read with interest the notes on this subject, I trust the following will be received in a cordial spirit. I cannot but be surprised that Barrington has had such scanty notice accorded to it. It is a Peach of noble appearance, fruits freely, and is of good quality when ripe; not quite so exquisitely flavoured as some possibly, but it should be included amongst the late sorts if only because it is such a free setter and generous bearer. Bellegarde can hardly be left out, or Dymond and Stirling Castle. Royal George with me is subject to mildew, otherwise it would be recommended. Alexandra Noblesse is grand, worthy a place anywhere. Sea Eagle, again, as a late variety, is fine. As an early I find Alexander cannot be dispensed with. I have not grown Waterloo. Hale's Early is one of our best as second early, and is a handsome productive Peach. Why is Crimson Galande not mentioned? It is a first-season variety, colours splendidly, bears abundantly; in short, as a mid-season variety has been one of my best. These remarks pertain to outside culture only.—KITCHEN GARDENER.

PRIMROSES AND POLYANTHUSES.

MANY persons have a genius for taking trouble. They do many things that are unnecessary, and may indeed be better done if the simplest course be adopted, but then there is no genius involved in such procedure. I felt that must be the characteristic of a writer who advocated the sowing of seeds of Primroses and Polyanthus in pots under glass, and later pricking the seedlings out into a cold frame, later replanting finally outdoors. Now were these plants tender I could understand the need for all this care and concern, but seeing that they are hardiest of the hardy, it does seem as if the advice tendered was very needlessly inexact.

I have grown as many of these plants as most persons, having for many years raised several thousands annually from seed, and I both sowed outdoors in the autumn and in the spring, in both cases getting ample growth and numbers of hard sturdy plants. But I prefer sowing about the last week in August for one or two reasons. In the first place, when the seed is sown soon after it is ripened the coats, usually hard, are less so than they are after having been stored for the winter. Then not only is growth more even, but strong plants are obtained to stand the winter in the seed beds, where they winter well. Finally, there is the advantage of being able to put out the plants where wanted to bloom direct from the seed beds, in April or May, just as it may be convenient, and the plants then become deeply and firmly rooted ere hot dry weather sets in, such as we commonly experience in the summer. That is great gain, as plants raised in the spring, even under glass, have to be planted out in June or July, when the weather is often hot and dry.

In addition, there is the gain of getting in flower the following spring plants so large relatively that they make a wonderfully fine show. I have commonly had plants to flower thus fully 12 inches across, and having huge heads of bloom. How simple and satisfactory is this method! But plants raised by sowing seed outdoors in April on fine soil, keeping it watered and shaded until good growth results, are always satisfactory for those who cannot get seed to sow earlier. Polyanthus and Primroses are deep rooted, and once well hold of the ground soon hold their own without much watering being needed. Still, when planted out afresh in the summer water must be given a few times at the first to enable them to secure a hold.

Wherever these hardy spring flowers are grown it is wise to make a sowing every year. In some soils and situations plants, after blooming time, begin to die off or are eaten up with spider in the summer, or the crowns become so thick that they are incapable of sustaining good leafage; hence it is so much better to have a succession of young plants to replace them. It is better, too, than lifting and dividing the old ones, except where the soil is deep and the atmosphere moist. Whenever that form of increase is adopted it is well to do it in the spring, hard cutting back the root stems, and thus compelling the formation of new roots.—A. D.

NOTES FROM THE GARDEN ISLE.

MR. FRANK ORCHARD, who for the past seven years has had charge of the gardens of H. Mitchell, Esq., Undermount, Bonchurch, I.W., has left the above, and joined his brother, Mr. C. Orchard, in his business at The Harbour Gardens, Bembridge, Isle of Wight.

J. Thornycroft, Esq., the head of the famed torpedo boat-building firm of Chiswick, and of Steyne House, Bembridge, has purchased nearly the whole of the reclaimed land at Bembridge Harbour, and part of the Bembridge Lodge Estate, from the United Realisation Company, and is developing and improving the property.

The Technical Committee of the Shanklin, I.W., District Council arranged with Mr. C. Orchard of Bembridge to give a lecture on "Hardy Fruits Applicable to the Isle of Wight," at the Institute, Shanklin. The lecture was illustrated by large coloured diagrams. Varieties of Apples, Pears, Plums, Gooseberries and Raspberries, which experience had proved to do well in the Island, were mentioned, and the special feature which made each variety valuable. The growing of Figs was strongly advocated, the climate of the Island being specially favourable to the growing and ripening of this fruit. Grading and sorting Apples as to size and colour was strongly recommended. The establishment of a central wholesale market for fruit was advocated as essential in helping the growth of an industry for which the locality was in many respects especially favoured.

Vegetation in the Isle of Wight is not quite so forward as last year, which was an exceptionally early one to a certain date. Frosts have occurred frequently; on Tuesday morning, February 28th, 10° was registered. The sun during the day has shone brilliantly, tempting the honey bee to leave the hive and visit the yellow Gorse bushes. Crocuses and other spring flowers are now in good bloom, as is *Prunus Pissardi*. The heads of the early Asparagus crop are showing through the surface of the soil, only to be cut off by the frosts. The hardy bush fruit trees are bristling with flower buds, which the weather is keeping back, and everything so far points to a very favourable season.—ISLANDER.

BALSAMS.

IN order to have fine plants of Balsams, say 3 feet high and as much in diameter at the base, seeds should be sown about the end of March in light rich soil in pots or pans, and placed in a warm moist place, such as a two-light frame on a gentle hotbed. If the place can be entirely devoted to the Balsams so much the better, and a piece of glass placed over the seed pan will assist germination. As soon as the seedlings can be handled they should be placed in small pots, using slightly richer soil than that in which the seed was sown. Keep them plunged in the frame with their foliage not more than 6 inches from the glass, for the object is to promote a quick and sturdy growth, and the warmth in the bed will incite a healthy and rapid root action. Shade them from strong sunlight, and afford a little ventilation so long as the temperature can be kept above 70°.

Do not allow the plants to become root-bound, but transfer them into 5 or 6-inch pots as soon as the roots are working freely round the sides. This remark applies with equal force to the future, as any check at the roots will cause a premature formation of flower buds, and thus render it almost impossible to obtain a large, well-flowered, and symmetrical specimen. At this potting the soil should be rich, but neither too light nor too heavy. If the loam at hand is light, then all that need be added will be a fourth of its bulk of dried cow manure passed through a sieve, but should it be stiff and heavy in texture then a third of the bulk must be leaf soil, or, failing that, sand.

Let the drainage be perfect, but not necessarily bulky. The soil on all occasions ought to be warm when used, and the plants sunk deeper at every potting operation. Keep them plunged in the hotbed, and not too close together; apply water carefully, and allow a free circulation of air according to the temperature.

Subsequently pots 9 inches in diameter may be used, and soil as before described. If there is no longer sufficient head-room in the frame, let the plants be placed close to the glass in a warm greenhouse, taking care to maintain an atmosphere as near like that of the hotbed as possible. As the side shoots develop tie them down close to the pot. It is a good plan to pass a wire or string round the pot underneath the rim, to which strands of matting can be attached from the shoots above. Occasional weak supplies of liquid manure may be given as soon as the roots have taken to the new soil.

If flower buds show, keep them picked off for the present until the plants are established in their largest pots, which need not be larger than 12 inches in diameter. The soil for the final potting ought to be sound fibrous loam—if it has been stacked nine months and had a layer of manure between each two layers of sods it will be just right—three parts; cow manure one part, and a dash of sand. Let the plants be potted rather firmly. Stake and tie out as the potting is completed, and return to their growing quarters. Take care to shade at all times from strong sunshine, and as the plants come into flower give them a cooler atmosphere and feed with liquid manure as they require it. Keep all seed pods picked off. Those who possess them may place a few crushed bones over the crocks at the final potting.—F.

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

OUR only horticultural benefit society continues to grow in size and importance, as healthy institutions have a knack of doing, and its annual business meetings are usually well attended. The 1899 fixture, which took place at the Caledonian Hotel, Adelphi, Strand, on Monday evening last, was rather an exception in this respect, for the attendance was certainly meagre. This might have been brought about, as was suggested, by the knowledge possessed by the members that all affairs were right and satisfactory. Be that as it may, everything worked without a hitch, and there was no demur raised to anything. Mr. J. Fraser, of "The Gardening World," took the chair at eight o'clock precisely.

After the customary preliminaries had been disposed of the report and statement of accounts were presented by the Secretary, Mr. W. Collins, and the Hon. Treasurer, Mr. Jas. Hudson. The adoption of the report and statement of accounts was formally moved by the Chairman, seconded by Mr. Coates, and carried *nem. con.* It is pleasing to know that the several funds are in excellent condition.

This done, the Chairman reviewed at some length the scope and object of the Society, as well as its working and present status. Mr. Fraser expressed surprise that a society like the "United," which could fairly claim to be national, could be carried on with so little expense of management, and suggested that the secretarial duties were performed by Mr. Collins more as a labour of love than for the sake of emolument. After touching upon the benefits to be obtained by members in the way of sick pay—18s. per week for twenty-six weeks, and 9s. per week for another twenty-six weeks in each year, for the upper division, and 12s. and 6s. per week for the same respective periods in the lower division—Mr. Fraser laid special stress upon the provident section of the Society. Under this section a certain amount was laid aside each year to the credit of each member, these deposits bearing interest until both principal and interest were withdrawn by the member on attaining the age of seventy years, or previously by his heirs or executors in the event of death. The Benevolent Fund was warmly praised, and Mr. Fraser concluded by advising every member to do his best individually to bring other members into the fold.

It was resolved, following the proposal of Mr. A. Hemsley, to print 25,000 copies of the report in addition to those required for the members, in order that by being distributed they might advertise the claims of the Society. The meeting was scarcely moved out of the even tenor of its way even by the election of the committee-men, although there certainly was a thrill of animation. The retiring members, Messrs. H. Peerless, E. Burge, and W. Foreman, were re-elected; and Messrs. Summers, Taylor, and C. F. Harding were chosen to fill the places of Messrs. N. Cole, G. W. Cummins, and E. G. Wheeler. Mr. Harding goes on Committee as a representative of the journeymen gardeners.

Mr. W. Collins' value as Secretary is so well known that his re-election was simply a matter of form. Thus Mr. A. Hemsley found the meeting entirely with him in his appreciation of their worthy Secretary, as did also Mr. J. Hudson, who supported the motion. Mr. Hudson mentioned incidentally that the turnover between himself and Mr. Collins during the past year had been £2000, and although each kept books independently of the other, they were found upon comparison at the end of the year to tally even to a penny.

Hitherto a member of the "United" has not had an official emblem of membership; but this defect has now been made good, and a very handsome emblem designed by Mrs. Harvey (*née* Miss Lilian Hudson) has been accepted, and samples of it, both framed and unframed, were on view. The design itself is 13 inches by 10 inches, and the price will be 1s. 6d. The accompanying illustration, which has been prepared from a photograph, is a reduction of the original, and brings out admirably its salient features. Now the Society has an emblem as well as a motto, and both are worthy of it.

Votes of thanks to the Committee, the Hon. Treasurer (Mr. Jas. Hudson, who has been connected in an official capacity with the Society for some fourteen or fifteen years), the Trustees, the Horticultural Press, and the Chairman, were all passed through hands with great good humour and celerity. Judging from appearances everybody connected with the Society seems to like work, and consequently to work well.

NOTES ON ALPINE FLOWERS.

WULFENIA CARINTHICA.

WHILE it is more pleasing to write of plants which will give satisfaction to growers, it is none the less needful to tell of those which hardly repay the trouble—even if it be small—of growing them. *Wulfenia carinthica* is one of the latter class, and is so because of its very shy flowering. The writer has known it in gardens for years without producing a single bloom, and in others where a large plant gives an occasional spike. He does not, however, know any place where it blooms with the freedom it ought to show to cause it to be recognised as a good alpine flower. It is also liable to perish in winter if allowed to form large plants. This *Wulfenia* was introduced from the Carinthian Alps about eighty years ago, and the genus was named in honour of Francis Xavier Wulfen, a botanist who was the author of a work on the plants of Carinthia. It belongs to the natural order of *Scrophularineæ*, and has a loosely arranged spike barely a foot high, bearing blue flowers, which are somewhat drooping. *Wulfenia carinthica* is propagated by seeds or division, and may be grown in a rather peaty soil. The plants ought to be divided in April if increase is desired.

ERYTHRÆA MASSONI.

This is, it appears, the correct designation of a little plant best known by the name of *E. diffusa*. One cannot but qualify this statement by saying that the plant is little known, because of the difficulty some find in retaining it as a permanent occupant of their gardens. It frequently dies with many after flowering. With the writer it has been more complaisant, and he has had, and still has, one plant in the same position that it has occupied for seven or eight years. In his garden it is grown in light sandy peat soil on the raised edge of a path, and where it is partially shaded in summer by tall herbaceous plants. One requirement is carefully attended to in summer; this is a plentiful supply of water in continued dry weather. In light very well-drained soil this little plant has a thorough soaking of water when it appears to be becoming in need of same.

E. Massoni is a charming little flower of a reddish purple, not unlike a dwarfier and prettier form of the native dwarf Centaury, *E. Centaureum*. It is increased by division or by seeds. The latter is the more convenient method, and gives better results. Seeds are freely produced, and may be sown as soon as ripe, or in spring. *E. Massoni* is a native of the Azores, but has proved quite hardy with the writer, never receiving any protection in winter. While partial shade, as is previously mentioned, is given here, the plant ought not to be overhung by other flowers. It opens in sunny weather.

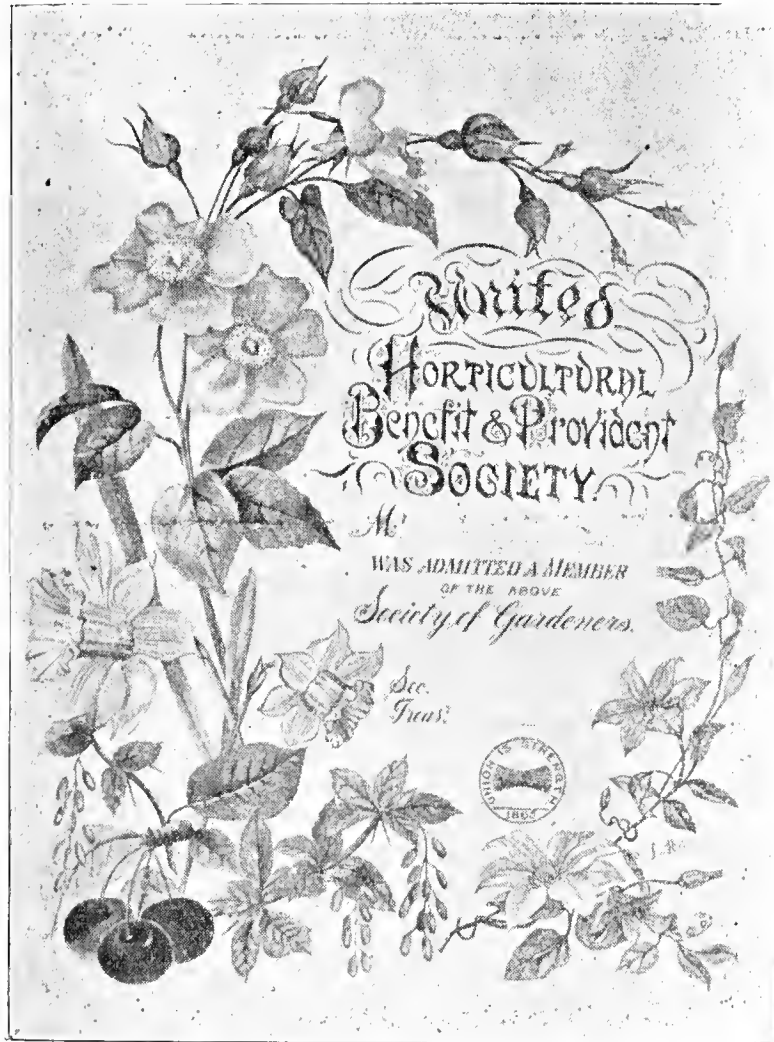
ERYTHRONIUM AMERICANUM.

On page 94 *E. Hartwegi* was briefly spoken of, and the writer now desires to refer at greater length to a plant which has been introduced for a long

time, but which has given a great deal of trouble to cultivators. This is *Erythronium americanum* (the American Dog's-tooth Violet)—an unfortunate name, seeing that we have now so many *Erythroniums* from across the Atlantic. The troublesome feature of this Dog's-tooth Violet is its refusal to flower under the treatment which proves so satisfactory with others. This appears to be caused by its splitting up into small offsets, which go so deeply into the soil as to become unable to flower. The way to prevent this is to enclose the plants within stones all round and at the bottom. A good stiff soil is also an advantage. The flowers of *E. americanum* are yellow, and it is a pretty and pleasing plant where it does well.

CAMPANULA SOLDANELLEFLORA.

The Soldanella-flowered Campanula is little seen, and it is not often that one finds it offered for sale. It partakes in its general features of the style of the native Campanula rotundifolia, or of *C. Hosti*. The flowers of what one may call the preferable form are semi-double, and are remarkably pretty and uncommon looking in a collection of the smaller Bellflowers. It grows 9 inches or a foot high. Increase of *C. soldanellæflora* is effected by means of division or cuttings. It may be also raised from seeds, but only a proportion of the seedlings will come semi-double. Some raised by the writer presented a good deal of variation. There were the semi-double form in perfect condition; flowers similar to those of the Harebell or *C. Hosti*, and others with narrow, deeply cut segments varying in size. *C. soldanellæflora* grows well in almost any moderately heavy soil, and lasts longer in bloom if in slight shade, but not overhung by other plants or by trees.—ALPINUS.



ROYAL GARDENERS' ORPHAN FUND.

"A. D." makes some pertinent remarks on the above Fund in your issue on February 23rd, page 153. He deplores the fact that not one of the fathers of the nineteen children nominated for election this year had been a subscriber to the charity, and refers to the indifference of gardeners generally in not becoming subscribers, and asks, Can anyone explain it?

I am afraid it is difficult of explanation. A glance at the list of subscribers for 1897 reveals the fact that many men occupying prominent positions as head gardeners do not subscribe to the Fund, and who, we may assume, could well afford the sum of 5s. or more per annum. It is possible the claims of the Fund have not been brought home to them by personal solicitation.

But the large majority of gardeners are poorly paid, and can ill afford even the small annual sum of 5s., and especially as they have no guarantee that their children will receive the benefits of the Fund should they require it. As a worker for eight years on behalf of the Fund, I have solicited scores of gardeners to become annual subscribers, and what is the result? I have four gardeners on my book, the remainder being nurserymen and private ladies and gentlemen. Some whom I have asked say, "We have no guarantee that we shall receive any benefit; we have no voice in the management, as we live at too great a distance from the place of meeting, and it is those living near who can do as they like and pull the strings on behalf of any candidates for election."

I do not endorse these views, as I have every confidence in the Executive Committee, and I should like to impress on the great body of gardeners the necessity of becoming annual subscribers; and if there is anything in connection with the Fund they do not approve of, let them make it known through the horticultural press or otherwise.

The time will come when it will be the children of subscribers who will benefit by the Fund. But it must not be two children from one family to the exclusion of children from other families, whose claims are equal or perhaps more deserving. At the last annual meeting the following was added to Rule XI.—"Not more than two children of the same family can be in receipt of the benefits of the Fund at the same time." Previously the rule did not specify how many children from one family might receive the benefit of the Fund. But why should two of one family receive the benefit of the Fund while other families are left out? Surely the Fund is meant to benefit a number of families and not the few. At the present time eight families have each two children on the Fund, each child being allowed 5s. per week.

Mr. A. Dean suggested that at a future time it would be expedient to insist that there must be four children under twelve years of age in a family before two of its members could be on the Fund at the same time. I do not agree with him there. I suggest that only one child from a family shall receive the benefit of the Fund, unless under exceptional circumstances, such as the loss of both parents. I would further suggest that should the circumstances of the case require it, the child of a deceased subscriber who has subscribed for five or more years shall be entitled to the benefit of the Fund without election; or the child might be allowed twenty or more votes for each year the father had subscribed.

I know these suggestions require consideration, but it is in the interest of the Fund I make them, and I expect to hear the opinions of others; and possibly the Executive Committee may be induced to consider them, and so make the Fund of still greater benefit, and perhaps by so doing the great body of gardeners will be encouraged to become subscribers.—J. B. STEVENSON, *Hon. Local Secretary, Bournemouth.*

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MARCH 14TH.

ON Tuesday last the Drill Hall presented a very gay spectacle despite the heavy fog which enshrouded this and other parts of London. Every table was requisitioned to almost its fullest extent with splendidly diversified exhibits of excellent quality. Orchids were magnificent, and considering the weather, large in numbers, but of course miscellaneous floral displays formed the backbone of the exhibition. Apples were admirably shown from Withington, Hereford, and Sittingbourne.

FRUIT COMMITTEE.—Present: Geo. Bunyard, Esq. (in the chair); with Messrs. R. Fife, J. Smith, G. Wythes, W. Pope, W. Bates, W. Iggulden, A. Dean, S. Mortimer, A. F. Barron, J. Basham, E. Shaw-Blaker, and J. H. Veitch.

The collection of Apples from Mr. J. Watkins, Withington, Hereford, was an excellent one, and comprised many varieties that are not customarily seen in good condition at this period of the year. Almost the whole of the fruits were firm, of large size, and exceptionally rich in colour. Amongst the most conspicuous were Lord Derby, Hornead's Pearmain, Beauty of Kent, Lane's Prince Albert, Hanwell Souring, New Bess Pool, Dumelow's Seedling, Annie Elizabeth, Catshead, Claygate Pearmain, Sandringham, The Queen, Bramley's Seedling, Histon Favourite, Flower of Kent, Buxton's Pearmain, Wadhurst Pippin, Blenheim Pippin, Cox's Pomona, Flanders Pippin, Wealthy, Reinette du Canada, Nelson's Codlin, Brabant Bellefleur, Newton Wonder, and Brownlee's Russet.

Mr. A. J. Thomas, Rodmersham, Sittingbourne, the well-known producer of Pear, was represented by a collection of Apples, which were tabled in most creditable condition. The individual fruits were not large, but they were sound and of high colour. Particularly noteworthy were Betty Geeson, Blue Pearmain, Hanwell Souring, Lady Henniker, Glory of England, Old Russet, Barnack Beauty, Striped Beefing, Chelms-

ford Wonder, Newton Wonder, The Queen, Sandringham, Gloria Mundi, Bramley's Seedling, Annie Elizabeth, Lane's Prince Albert, Bismarck, and Lord Derby.

Mr. John Russell, Richmond, exhibited Seakale Russell's Solid Ivory; a very good form. Mr. G. Baker, gardener to H. A. Blythe, Esq., Stanstead, staged a dish of *Cyphomandra betacea*. Mr. J. Masterson, gardener to the Earl of Camperdown, Shipston-on-Stour, exhibited good dishes of Blenheim Pippin, Allen's Everlasting, and Royal Russet, also excellent dishes of Uvedale's St. Germain.

Mr. T. J. Gilbert, Bourne, Lincoln, sent dishes of Bergamotte d'Esperen, Cox's Orange Pippin, Bramley's Seedling, and Barnack Beauty. Mr. J. Cocks, Peterborough, sent a good bundle of well grown Leeks. Mr. J. Crook, Forde Abbey, Chard, exhibited four dishes of Apples, comprising good specimens of Cowarne Quoining and Marget's Seedling. Mr. G. Kent, gardener to L. Solomons Esq., Dorking, exhibited a dish of new Potatoes of good size and very well formed.

FLORAL COMMITTEE.—Present: C. E. Shea, Esq. (in the chair); Messrs. C. T. Drury, H. B. May, R. Dean, R. Wilson Ker, Wm. Howe, Thos. Peed, C. E. Pearson, J. W. Barr, J. D. Pawle, G. Gordon, E. H. Jenkins, C. R. Fielder, E. T. Cook, C. Blick, D. B. Crane, J. Walker, H. J. Jones, E. Mawley, J. Fraser, C. Jefferies, and W. Marshall.

Messrs. Wm. Paul & Son, Waltham Cross, sent a very fine collection of Camellias in pots. The plants were literally covered with flowers, and appeared to be in the pink of condition. The white varieties were represented by Alba Plena, Fimbriata, Montironi, Princess Charlotte, Mathotiana alba, a splendid white form of the old favourite, and Donna Maud Pia; while such varieties as the Marchioness of Exeter, Exquisite, C. H. Hovey, L'Avenir, Pride of Waltham, and Madonna constituted a strong force in the coloured varieties. Ten boxes of cut blooms in still greater variety formed a good front to this excellent and interesting display.

The St. George's Nursery Company, Hanwell, again contributed a fine display of Cyclamen, about 130 plants being staged in their well known style. The blooms were very fine, and consisted of a great variety of colours, while the plants themselves could only be classed as excellent. Messrs. J. Hill & Son, Edmonton, occupied one side stage, running the length of the hall, with a capital exhibit of Ferns, and a few other foliage plants; *Adiantum tinctum*, *Blechnum brasiliense*, *Pteris tricolor*, *Nephrodium erythosorum*, *Pteris arguta*, *Blechnum occidentale*, and *Doodia aspera multifida* were conspicuous with their tinted foliage, and made a very attractive exhibit. Mr. John R. Box, Croydon, staged a capital strain of Cinerarias, the plants being exceedingly dwarf, and the colours bright and varied, a first-rate strain.

Messrs. R. & G. Cuthbert, Southgate, made an attractive exhibit of Azalea mollis and Ferns. The majority were seedlings, with a few named varieties. The plants were just masses of flower, in many varied tints, and the Ferns formed quite a relief to so much colouring. Messrs. R. Wallace & Co., Colchester, staged a very interesting display of Irises, such as *I. persica*, with its remarkable colouring, *I. assyrica*, and *I. stylosa*, also a few *Mu. cari*.

Captain Holford, Tetbury, undoubtedly contributed the chief feature of the meeting with a magnificent display of Hippeastrums, that occupied one side of the centre staging, running the entire length. The plants were growing in 6-inch pots, many of them carrying two spikes of bloom. The colours were exceedingly bright and varied, and no doubt great strides are being made to improve the shape of the blooms. A truly fine exhibit. Mr. H. B. May, Edmonton, arranged a group of Clematises in full flower, but the effect was quite destroyed by the light from the windows behind them. The varieties Lady Londesborough, Miss Bateman, Fair Rosamond, Lord Londesborough, and Sir Garnet Wolseley were most notable.

Messrs. Barr & Son, Covent Garden, staged an extensive display of spring flowers. The chief were the numerous forms of Narcissi, which were well shown. The Queen of Spain, Madame de Graaff, Empress, Emperor, W. P. Milner, Albicans, and Cyclamineus major were very attractive, as were also a collection of Polyanthus Narcissi. *Helleborus viridis graveolens*, and *H. Colchicus* Lothair, with Anemones, Crocuses, and Lachenalias contributed to the display. Messrs. F. Sander & Co., St. Albans, exhibited plants of *Deutzia Lemoinei*, a cross between *D. gracilis* and *D. parviflora*. Messrs. Thos. Cripps & Son, Tunbridge Wells, sent a group of Clematis in pots, also boxes of cut bloom.

Mr. G. Mount, Canterbury, opened the ball in the Rose world with a beautiful display. The Teas were excellent, and the colour in the Hybrid Perpetuals beyond reproach. The boxes contained capital blooms of Captain Hayward, Mrs. J. Laing, and La France, Niphetos, Catherine Mermet (grand), and Bridesmaid, while the blooms displayed in vases carried excellent foliage. Messrs. J. Veitch and Sons, Chelsea, contributed baskets of *Deutzia Lemoinei*, *Azalea mollis*, *Spiraea confusa* (media), and *Azalea linearifolia* backed by Palms.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); and Messrs. J. O'Brien, de Barri Crawshaw, T. W. Bond, J. Colman, H. Little, F. Sander, A. Outram, H. J. Chapman, W. H. Young, H. Ballantine, E. Hill, H. T. Pitt, J. Jaques, W. H. Protheroe, C. Winn, J. G. Fowler, and S. Courtauld.

The usual corner of the Orchid table was occupied with a beautiful collection from Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nurseries, Chelsea. The plants were fairly numerous, but the principal attraction was found in the excellent quality of the richly coloured flowers. There was, too, no stiffness observable in the arrangement, and this alone made the stand very interesting. Such *Dendrobiums* as *Euosmum leucopetrum*, *Cybele*, *nobile*, *Pitcherianum*, *Euryales*, *Wardiano-japonicum*, *Edithæ*,

Ainsworthi intertextum, Euosmum delicatum, subclausum, and Wiganæ were charming. There were also Epidendrum elegantulum, Cymbidium eburneo-Lowianum, Epiphronitis Veitchi, Cypridium Godseffianum, C. Alice, Cirrhopetalum picturatum, Cattleya Trianae nivalis, and others, with Phalaenopsis Aphrodite in superb form that was raised from seeds saved at Messrs. Veitch's Langley nurseries.

Orchids were sent from Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart, Burford Lodge, Dorking. The most conspicuous of the many fine plants included Dendrobium Juno, burfordiense, Wiganæ var. xanthochilum, nobile Amesiae and nobile Burford var., with Chysis Chelsoni, Masdevallia ignea Boddarti, Cypridium hirsuto Sallieri, Phaius Cooksoni, Cymbidium eburneum, Masdevallia Harryana, Cattleya Trianae Reine des Belges, Cœlogyne pulchella, C. conferta, Bulbophyllum barbigerum, Lælia harpophylla, Galeandra Devoniana, Brasso-Cattleya Lindleyana, Vanda Mooreana, Spathoglottis Lobbi, Epidendrum Endresii, Bifrenaria Harrisonæ aurea, Epiphronitis Veitchi, Catasctum barbatum spinosissimum, and Odontoglossum crispum, polyanthum xanthotes, luteo-purpureum sceptrum, and Andersonianum. Mr. White also sent a group of Calanthe Sanderiana.

Cœlogyne and Dendrobium made the bulk of the stand arranged by Messrs. B. S. Williams & Son, Upper Holloway, in which Ferns and Palms were interspersed amongst the Orchids. The Cœlogyne cristata alba were very beautiful, as were the numerous Dendrobiums. There were also Lycaste Skinneri, Ada aurantiaca, Oncidium sarcodes, Cymbidium Lowianum, Odontoglossum crispum, several Cypridium, and others. Messrs. F. Sander & Co., St. Albans, sent Cypridium Furzianum, Dendrobium Wardianum, Cattleya Trianae var., Phaius Traceyanum, and Odontoglossum mulus. Acalypha hispida (Sanderi) and other plants also came from St. Albans.

Messrs. H. Low & Co., Bush Hill Park, made up a very showy exhibit of Orchids, in which Cattleya Trianae in variety showed to advantage. Cypridium were also very fine, as were Odontoglossum and others. Messrs. Charlesworth & Co., Heaton, Bradford, contributed a most diversified group of Orchids that attracted a considerable amount of attention. Phaius Norman in variety, Cattleya Trianae, Cypridium, Dendrobium, Odontoglossum, and Cymbidium were all represented. The splendidly grown plants were all carrying substantial, well-coloured flowers.

Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, exhibited several spikes of Odontoglossum that well illustrated the excellent culture to which The Dell plants are subjected. De Barri Crawshaw, Esq., Sevenoaks, showed Odontoglossum Rossi Crawshayanum, O. R. rosefieldensis, O. Ruckertianum, and one or two others. Cypridium were staged by Mr. A. Waits, gardener to J. F. Ebner, Esq., Beckenham; and Mons. C. Maron, Brunoy, France, exhibited a few superb Orchids, including Lælio-Cattleya Impératrice de Russie. Messrs. Jules Hye, W. E. Ellis, W. C. Walker, and others each sent a few plants of more than average merit.

MEDALS.—Fruit Committee: Silver-gilt Knightian medal to Mr. J. Watkins, and a silver Knightian medal to Mr. A. J. Thomas. Floral Committee: Gold medal to Capt. Holford; silver-gilt Flora medal to Messrs. W. Paul & Son; silver Flora medals to Messrs. H. B. May, R. & G. Cuthbert, and the St. George's Nursery Co.; bronze Flora medals to Messrs. J. R. Box and T. Cripps & Son; silver-gilt Banksian medal to Mr. G. Mount, and a silver Banksian medal to Messrs. J. Hill & Son. Orchid Committee: Silver-gilt Flora medals to Messrs. W. H. White and Charlesworth & Co.; silver Flora medals to Messrs. J. Veitch & Sons and H. Ballantine, and silver Banksian medals to Messrs. B. S. Williams & Son and H. Low & Co.

CERTIFICATES AND AWARDS OF MERIT.

Apple Barnack Beauty (J. Gilbert).—This is an Apple that is widely cultivated, and is familiar to every fruit grower. The award was given to it as a market variety (award of merit).

Apple Allen's Everlasting (J. Masterton).—An old Apple, that is not remarkable for its beauty. It is over medium size, has very prominent angles, extending the whole depth of the fruit; the large eye is very deeply set; the colour is dull green, plentifully marked with russet (first-class certificate).

Azalea mollis Purity (R. & C. Cuthbert).—A creamy white variety of the usual type (award of merit).

Hippeastrum Robin (Captain Holford).—A good crimson, with a well marked throat (award of merit).

Hippeastrum Virginia (Captain Holford).—A rose flaked form with a good white ground (award of merit).

Hippeastrum Apple Blossom (Captain Holford).—A grand form, rose coloured, beautifully pencilled and veined (award of merit).

Hippeastrum Murilli (Captain Holford).—A deep glowing crimson, of grand form and texture (award of merit).

Cypridium Talisman (Jules Hye).—This is a very distinct form. The colour is very dark blackish crimson, and the whole flower has the appearance of being varnished (award of merit).

Dendrobium Wiganæ xanthochilum (W. H. White).—A lovely yellow form. The flower is most chaste and beautifully formed (award of merit).

Lælio-Cattleya Impératrice de Russie (C. Maron).—This has resulted from a cross between Cattleya Mendeli and Lælia Digbyana. It is superb. The sepals and petals are delicate rose, and the heavily fimbriated lip is soft blush (first-class certificate).

Masdevallia ignea Boddarti (W. H. White).—A superb variety of glowing scarlet colour (award of merit).

Odontoglossum crispum The Sultan (Jules Hye).—A magnificent variety. The central colour is bright chocolate edged and occasionally spotted with white (first-class certificate).

Odontoglossum excellens Hyeanaum (Jules Hye).—A very finely proportioned flower. The yellow ground colour has blotches and spots of brick red (award of merit).

Odontoglossum Duke of York (W. Stevens).—One of the loveliest flowers in the Hall. The broad petals are white with red spots of varying sizes; the narrower sepals are of similar colour. The lip has a circular patch of red within the fimbriated margin (first-class certificate).

Odontoglossum Mrs. J. Lehmann (J. Lehmann).—A starry flower with large reddish brown blotches on the white ground (award of merit).

Phalaenopsis Cassandra (J. Veitch & Sons).—A chastely beautiful hybrid that resulted from a cross between P. Stuartiana and P. rosea. The sepals and petals are pure white with numerous rose-coloured spots at the base. The lip is patched with rose, and has white on the front lobe (award of merit).

Phalaenopsis Hermione (J. Veitch & Sons).—The parentage of this hybrid is uncertain, but it is possibly from a cross between Stuartiana and Luddemanniana. The ground colour is almost wholly obscured by the rose-coloured spots. The lip is wholly rose-crimson (award of merit).

Sophrolalia iata superba (J. Veitch & Sons).—This bigeneric hybrid resulted from a cross between Sophronitis grandiflora and Lælia Dayana. The flower is almost identical with the first named parent (award of merit).

THE YOUNG GARDENERS' DOMAIN.

DOUBLE VIOLETS.

THERE are few gardens where Violets are not grown more or less, for the reason that the blooms are always useful, especially during the winter and early spring months; therefore a few notes on their culture may be of some use to readers of the Domain.

The ground which is intended for the plants during the summer months should be manured and roughly dug at the latter end of autumn to let the frost get well into it. The beginning of May is a very suitable time for planting the runners, only using the side growths and securing with each a little root if possible. Well tread and level the ground, and plant them firmly at a distance of a foot between the rows and plants, giving a thorough watering after the planting if the ground be anyway dry.

During the growing season cut away runners and flower buds as they appear, and keep weeds in check by occasionally hoeing. Do not at any time let the plants want for water, giving at intervals some liquid manure; and if the weather be very hot during the summer apply a light mulching of Mushroom-bed refuse. It is a good practice during the growing season to lightly spray the plants in the evenings with a syringe or a fine-rose water-can when it has been hot during the day, as red spider is thus kept in check.

The time for lifting and placing in their flowering quarters should be the middle of September, so all preparation must be made in time to receive them. Some prefer planting in cold frames, but in my opinion they do better if a hotbed is made for them. Make the bed in time for it to settle and cool a little; it should consist of leaves and litter in proportion of three parts of the former to one of the latter, filling the frame to within a few inches of the glass, and when settled add about 6 inches of good soil. When the time, as before stated, has arrived for putting into the frames, give the plants a thorough watering if the ground be dry, cut them all round with a spade, keeping far enough away not to injure any of the roots, then carefully lift in order that they may have a ball of soil about the roots. In planting place them at a reasonable distance apart, according to the size of the plants, so that the air may pass freely between them, after which give a good watering with a rose water-can to settle the soil about the roots. The lights of the frame may be left off both night and day, but they should be in readiness if required, and in frosty weather also cover with mats. Remove all dead foliage from the plants, and all weeds as they appear, because if allowed to remain these will completely spoil them.—P. R.

STRAWBERRY FORCING.

PREPARATIONS are usually begun for the next year's supply of Strawberries as soon as the last dishes of fruit are gathered from the late forced or protected plants. A gardener's life is a regular round of preparations, and, as a rule, those who succeed the best are the ones who look ahead the farthest, and commence preparations a few days or weeks before the orthodox time.

One never hears of ripe Strawberries being provided too early, rather the reverse, so that there are three things that must be observed, and they are early runners, early potting, and early maturing. By securing these, a fourth can be found—early fruit. The runners should, therefore, be in their fruiting pots late in June or early in July; matured late in October, and carrying ripe fruit at the end of January, or very early in February.

Prompt potting is the first item of importance, and to have fruit at the earliest possible date the plants must not only be in their fruiting pots by the time named, but they must be stout and sturdy. In late seasons it is only those with vigorous young plants who will be able to have runners established in good time. Old plants do not produce runners as early as young plants, and they are not so vigorous or fine. The practice, therefore, of planting a bed of Strawberries annually in July is urged as excellent practice. The plants form early and good

runners, and also fine trusses for fruit. Runners, too, which are taken from young plants are not drawn in their early stages by a mass of surrounding foliage. This is a matter of importance, as if weakened and drawn during the first weeks after becoming plants they cannot form robust and fruitful crowns in the short season during which they must be perfected and matured. Runners, then, must be rooted early, under full exposure to light and air, so that they become dwarf sturdy plants, with the leaves spread horizontally, instead of tall plants with upright leaves and semi-bleached petioles.

There are various ways of rooting the runners, and with the object of gaining time and saving labour some growers peg them direct into their fruiting pots, on the principle of preventing a check by subsequent potting. This, however, is not considered the best plan, for two reasons—namely, the soil must be made so firm that the roots are not emitted freely and quickly; and because when the pots are necessarily spread over a large space of ground, watering cannot be done carefully, with the result that the soil in some pots will be too dry, and in others may become sour by extreme wet. It is better to layer the runners in small pots, of moderately firm but rich light soil, composed of equal parts of loam and sweet decayed manure, with an addition of crushed charcoal.

—INTERESTED.

(To be continued.)



HARDY FRUIT GARDEN.

Protecting Wall Trees. Although actual protection is not needed by Apricot, Peach or Nectarine trees until the blossoms expand, it is desirable that the material for doing so be in readiness and arranged so that it is readily available.

Protecting with Curtains.—When the fruit wall is provided with a coping of projecting wood or glass, there is something on which to hang the projecting material. This may consist of woollen netting, frigi domo, tiffany or canvas. Whatever material is used, brass or iron rings should be sewn to the upper edge, and then the curtains may be run on iron rods fixed on the front of the coping. This will keep it clear of the trees and enable it to be drawn on one side when not in use. It must be properly secured at the bottom, or it may be blown against the trees and do damage. The best arrangement is effected by means of an iron rod attached to short uprights fixed in the ground. Temporary security may be employed, and the blinds or curtains drawn up to the coping when not in use.

Pole Arrangements.—In the absence of a coping, long poles may be laid from the ground to the wall in front of the trees. On them stretch the protecting material, which may consist of canvas or tiffany. The material may be fixed on the poles, which should be movable, or the poles temporarily fixed and the protection removable. The latter is usually the better plan, but if netting is used neither it nor the supports need be interfered with.

Fish Netting.—It is very important that all protection should hang clear of the trees. If the ordinary stone coping projects sufficiently it may be enough to allow a double or treble thickness of fish netting to depend from it. Fish netting is good protection, and has the advantage of not needing removal until protection is no longer necessary. It admits light, and free ventilation is insured.

Other Means of Protection.—Branches of evergreen or deciduous trees may sometimes be conveniently used instead of more elaborate materials. Hornbeam, Birch, and Hazel of a twiggy character are thus employed, placing them behind main branches to hang over the blossoms. They should, however, only be utilised when it is impossible to protect with anything better.

Outdoor Figs.—Figs on walls may now be pruned and nailed. Thin out the shoots where they are crowded, and allow those remaining to be at full length. Where it is intended to plant young trees, the site should be well prepared and thorough drainage insured. A firm substantial soil is needed, one containing calcareous matter either naturally or introduced. Lime scraps or old plaster are good additions to soils deficient in lime. In the preparation of the soil avoid the use of manure, as it will cause growth of too strong character.

If maiden trees are planted, shorten the leading stem to 15 inches. One growth on each side may extend, these to be shortened the following year and two shoots allowed from each. Give them plenty of room so that lateral or side shoots may have room for extension, training them at full length. By shortening some of these each season, there will always be a supply of successional shoots for fruiting the following year. The old bearing wood ought then to be shortened closely in, to provide other young shoots, which if freely exposed to light and air become thoroughly well ripened and fruitful.

Strawberries. *Spring Planting.*—The planting of strong young plants ought now to be brought to a conclusion, especially with those which have no soil attached to their roots. Moved from one part of the garden to another, they can be lifted and planted without causing any check, but plants from other sources have to re-establish themselves; hence in planting, let the roots be carefully spread out, covered with soil and made firm, and if the ground is very dry, apply water.

Mulching.—The spring application of long littery and short manure combined may be commenced. The old exhausted mulching applied the previous autumn must be carefully raked off, removing at the same time deep rooting weeds and old discoloured foliage. Apply a liberal dressing of the manure, for by the time the fruit is ripe the strawy portion will have become bleached and clean, and the solid portion reduced in bulk by the washing into the soil of its soluble constituents.

Planting Fruit Trees and Bushes.—It is not too late yet to plant some of the smaller sized fruit trees, including bushes such as Currants and Gooseberries. These are usually well furnished with fibrous roots, and therefore move well and are soon re-established. Plant on previously prepared well firmed ground. Spread out the roots in wide holes. Stake and tie securely the standards, as well as others which need it. Lastly mulch the surface with littery manure. Prune the shoots half way back or more if weakly, selecting prominent wood buds.

Preparing Trees for Grafting.—The branches of large old trees shortened some time ago, should, just previously to grafting, be again cut back, so as to secure fresh clean portions of bark for the insertion of grafts. Smaller trees may have the head of the stocks sawn off at the time of grafting. Scions must be kept dormant in moist soil in a shady position until wanted.

FRUIT FORCING.

Cherry House. When the fertilisation of the blossoms has been effectual, the Cherries will be seen swelling at the base of the decayed flowers, then syringing may be resumed—once a day at present, and twice a day after the remainder of the flowers are cast and the weather is clear and warm. Artificial warmth will only be necessary to prevent the temperature falling below 40° at night, and to maintain 50° as a minimum by day. Ventilate at 50°, closing at the same, regulating the ventilation according to circumstances, but not allowing a rise above 65° without full air. If green aphides appear fumigate the house, and keep a sharp look out for black aphids, assailing it on its first appearance with tobacco water applied with a brush to the affected parts. The foliage must be dry when fumigation is practised. Keep a strict look out for grubs. Stopping will soon require attention. Pinch out the points of the growths when they have made 4 to 5 inches of growth, removing those shoots not required. Train extensions in their full length, also those for filling vacant spaces. Overcrowding must be strictly guarded against, it being prejudicial both to the present and future crops.

Peaches and Nectarines. *Early Forced Trees.*—An equable temperature is desirable during the stoning process. With too much heat at night the trees are deprived of rest, and this is not favourable to the fruit; cold and drying draughts in the daytime are even more injurious, a sudden change sometimes proving fatal to the crop. Continue the night temperature at 50° to 55°, also in dull weather in the daytime, but 70° to 75° with gleams of sun, ventilating from 65°. Attend to thinning the fruit betimes. It is not advisable to leave, during the stoning process, more than twice the number of fruits that are to remain for the crop. One fruit to each square foot of trellis covered with foliage is ample for the large Peaches, and the medium-sized varieties may be left a little closer. Nectarines being smaller than Peaches, are often left much too close, which reduces the size of the fruit proportionately, whereas to secure fine fruits they require thinning similar to Peaches.

Secure all the shoots required for extension and next year's bearing to the trellis as they progress, stopping any gross successional growths at a length of about 15 inches. If the stopping results in laterals pinch them at the first leaf, and so on as produced. If extension is wanted the uppermost laterals may be trained in. Pinch laterals on extensions to one leaf, and succeeding growths to one joint. If the trees are in good order there will be little necessity for stopping the shoots if they are allowed space for development of the foliage to solidify the wood as made. Shoots retained to attract the sap to the fruit should be stopped to one leaf, they having previously been pinched in the first growth at the second or third leaf. Avoid stimulating the trees while stoning, but afford due supplies of water and food of a phosphatic rather than nitrogenous nature.

Second Early Forced Trees.—Proceed with disbudding, a shoot being left at the base of the present year's bearing wood or last year's young wood, and one on a level with or above the fruits. The first must be trained forward, but the latter should be stopped at the second or third leaf. Upon extensions leave young shoots at 15 to 18 inches distance, the growth from the extremity being trained as a continuation of the primary branch. Commence tying early, as when the shoots are allowed to grow considerably they cannot be brought down without danger of breaking. Overcrowding must be carefully guarded against; it is fatal to fine highly coloured fruits and the formation and perfection of the wood for future crops. Thin the fruits by degrees, leaving those well placed upon the upper side of the trellis in sufficient quantity for a crop, or a little more, until the final thinning before stoning. In no case is it good practice to tax the trees with superfluous fruits after they are the size of marbles. A temperature of 55° to 60° at night, 65° by day, increasing to 70° to 75° is suitable.

Houses Started at the Beginning of February.—The trees in these have set their fruits, or nearly so, and recourse must be had to syringing in the morning and afternoon of fine days, but an occasional sprinkling, with damping the house, will suffice in dull weather, always having the foliage and young fruit dry before nightfall. Disbudding must be done gradually, commencing with the most forward growths, also thinning the fruits after it is seen which take the lead in swelling, removing the smallest first, but avoid large reductions of foliage or of fruit at one time.

A temperature of 55° at night, 5° less on cold mornings, 55° to 60° by day, advancing to 65° or 70° with gleams of sun, will bring the trees on sufficiently fast, ventilating from 55° or 60°, and not allowing an advance above 65° without full ventilation.

Houses Started Early in March.—With the flowers expanding syringing the trees must cease, for there is danger, especially in dull weather, of weakening the blossom and converting the pollen into paste. An occasional syringing may, however, be practised if the weather be unusually bright, and the atmosphere dry. Damping the floors and borders is generally sufficient, and a safer plan. Admit air freely in mild weather, and fertilise the flowers on fine days. Maintain the night temperature at 45° to 50°, 55° by day artificially, and 65° from sun heat. Admit a little air constantly, increase the ventilation at 50°, and give more as the heat rises, having full air on at 65°, closing at 50°. Superfluous flowers on the under side of the shoots may be removed by drawing the hand down the growth.

Late Houses.—Where the roof-lights have been removed they should be replaced at once, the buds being well advanced in swelling, and promising an abundant crop of fruit. If there be any trace of aphides apply an insecticide, or fumigate the house before the flowers expand. Nothing conduces more to a good set than removing the flowers on the under side or back of the trellis, and turning on the heat after the anthers show for a short time in the early part of the day to advance the temperature to 50°, and to permit of ventilation, as if there is a prevalence of dull cold weather at that time, closing the ventilators for safety prejudices the pollen. Houses that have fixed roof-lights must have the borders rendered thoroughly moist.

THE BEE-KEEPER.

PAINTING THE INSIDE OF HIVES.

At this season, probably more than at any other time, there are numerous empty hives in the apiary. This may arise from a variety of causes, and not necessarily through loss of stocks. If only a few colonies are kept there may be only a solitary empty hive on hand, whereas in a large apiary they may be counted by the dozen owing to the preparation that has been going on throughout the winter months in anticipation of an increase in stocks, but in either case their treatment should be the same.

Painting the inside of the hives with ordinary paint is not recommended. Stockholm tar and carbolic acid is what we have used with great success for several years past. We first operated on one hive which had been in use for several years, well working the mixture into all the crevices, the whole of the interior of the hive being done in this manner. This had the effect of destroying all insect life, and was of no detriment to the bees. The mixture should be put on whilst it is boiling, and is best prepared by placing the Stockholm tar in an open vessel over a clear fire; an old saucepan answers the purpose admirably. Add as much carbolic acid as will make it thin enough to be put on with an ordinary paint brush. Care must be taken that it does not boil over, or it will at once be in flames. Should it do so lift the vessel containing it off the fire, and place a flat piece of slate, or something similar, over the top, and the fire will be instantly put out. The carbolic will evaporate at a rapid rate, and it will be necessary to add more should the tar be too thick to work in readily.

It is more important to use this composition on hives that have been in use for several years, and it is not really necessary to treat new hives in the same manner; still, as it cannot possibly do any harm, it is an advantage. After the hives have been well dressed over place them in the open air for a few days and the smell will completely pass away. It sweetens the hives in a marked degree. Bees, too, appreciate it, as it is quite a common thing to see them alight on the hives the same day they have been placed in the open air. Although dozens of hives have been treated in the above manner, the bees have always taken readily to them; in fact, to judge from the manner they have worked after being placed in one of these hives, we are inclined to think they prefer them, as they are quite sweet in less than a week after being painted. We therefore have no hesitation in recommending all bee-keepers who have not tested the plan to give it a trial, and it cannot have anything but a beneficial effect on the bees. How often one hears of diseases, real and imaginary, of bees in various parts of the country! There would, however, be less cause of complaint if all the hives in the apiary were treated as above.

ENTRANCE BLOCKED BY DEAD BEES.

We are convinced many bee-keepers make a mistake in reducing the entrance to the hives too much. Now that the sun is gaining power daily they forget how important it is that the bees should be able to pass in and out of their hive freely. During the prevalence of bright sunshine and a high temperature quite recently, our attention was called to a hive in which there was great excitement among the

bees. At first we thought it was a case of robbing, but on a closer examination we found the entrance was blocked with dead bees. Instead of the entrance being half an inch or more in depth, it was less than two-eighths; this was caused by a projecting piece of wood. The consequence was the bees in their anxiety to leave their hive became suffocated, and there not being sufficient space to bring the dead bees outside, they blocked the entrance, and many bees were lost in consequence. The hive was at once placed on a dry floor board and the entrance opened its full width. But this did not allay the excitement. The front of the hive was then slightly wedged up about an eighth of an inch. This had the desired effect. Since then the bees have been working freely, and are probably now little the worse. Fortunately it was found out in time.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Growing Cucumbers and Melons in the Same House (*Inquirer*).—When a span-roofed house has the ends east and west, and Cucumbers and Melons are to be grown in it, the south side is the better for Melons and the north for Cucumbers. Such has been our experience, and we have tried them both ways, and singularly under the same conditions as obtain in your case. The plan you propose was not with us a success, but hardly a failure. We advise the Cucumbers being given the north side; they will do splendidly on a hotbed planted in soil. Melons cannot have too much sun, therefore give the position where they will receive it in full measure.

Making a Vine Border (*Idem*).—Vines like ferruginous or irony soils, and they also must have lime, magnesia, and potash. Lime you will supply in the old mortar, and both potash and magnesia with lime in the wood ashes. As the soil is not fibrous, broken paniles will be useful in keeping it open, but we should have preferred burnt earth; the crushed bones will yield phosphoric acid and some ammonia. We should add some charcoal and also horse droppings; the latter to ammoniate the iron, and the former to keep the materials open and sweet. With the drainage complete and the materials fairly proportioned, we do not see what more could be provided to make Vines flourish.

Cucumber Roots Knotted (*B. B., Novice*).—The plants are affected in the roots and root stems by root-knot celtworm, *Heterodera radicola*. The plants, if like those enclosed, are past remedy, the root stems being seriously affected. You may, however, water them without delay with a solution of soluble phenyle (Little's), 1 fluid ounce to 3 gallons of rain water, giving as much as in an ordinary watering. The watering can be repeated in about a week, but we fear there is little chance of saving the plants. The best preventive is to scald the soil and every part of the house in connection with the bed, this part being thoroughly done. We use soluble phenyle at double the strength given above for disinfecting purposes. It answers well, operating ten days or more before planting. Another plan is to mix through the soil, some time in advance of using, 1 lb. of a mixture of equal parts by measure of air-slaked lime—dry and floury—and soot, and half-pound of kainit per square yard of 1 foot depth of compost, mixing evenly, and turning over at least once, say at an interval of about a week. The house-bed, floor—everything—should be thoroughly scalded before placing in the prepared soil.

Plants for Back Walls of Vineries (R. L.).—We do not know of any plants better suited for the back walls of vineries than Camellias, which you mention. They will succeed well in the border 18 inches wide and deep, only take care to provide ample drainage. The compost must be rough—that is, fibrous, tearing up and rejecting the fine. It is also advisable to use some charcoal in the compost to keep it sweet, and sharp sand liberally to insure porosity.

Lasiandra, or Pleroma macrantha (T. P. Bridge).—Cuttings of half-ripened shoots root readily in a close frame in the stove at almost any time of year when they can be obtained, but the summer is the best. The plant thrives in a compost of three parts turfy loam and one part leaf soil or well decayed manure, with one-sixth of sharp sand, and about half as much of charcoal. It does not require a large amount of root room for the size of the plant, which is of a somewhat straggling habit, and for covering a pillar or a rafter in a cool stove is one of the most beautiful plants we have. It flowers most profusely when in a large state. A season of rest should be allowed in winter, but not so as to cause the leaves to fall, affording plenty, but not an excessive amount of water during the summer. It should be cut in, if at all, after flowering, this taking place in the winter time.

Pruning Variegated Box and Yew (O. F.).—The Variegated Box may be cut in as much as you like and it will break again; likewise the Variegated Yew, operating in either case towards the end of April. In neither case, however, is it desirable to remove more than irregularities of growth, so as to secure symmetrical and evenly balanced bushes where there is room for them to grow. Our remarks had reference to overgrown bushes, and if yours are such cut them back as much as necessary and they will break again and form compact growth, and afterwards they may be clipped annually if so desired. See page 228 for reply to your question on poultry.

Removing Rhododendron Flower Buds (Idem).—It is an excellent practice to “nip” off the flower buds before flowering when the plants are weakly, but better still to give them a top-dressing of cow manure, not too fresh or more than half decayed. It gives a deep green colour and freer growth; indeed, it is poverty the plants are suffering from. The best time for pruning old branches is the end of April during moist, mild weather.

Seakale Beds (N. B.).—The beds should be prepared without delay, stirring the ground deeply and manuring liberally. They must be 4 feet wide with 2 feet alleys between. Select one-year-old plants, place three triangularly in a patch 1 foot from each side of the bed and 2 feet from patch to patch, and the three plants in each exactly 6 inches apart. Plant so that the crowns are just level with the surface. You will then have two rows of plants in patches 2 feet every way from centre to centre in a bed, and the planting should be done at the end of March or beginning of April. If kept clean and not allowed to flower they will form crowns for forcing on the ground next winter. Seeds may be sown if you prefer in rings 6 inches in diameter, making the drill an inch deep, and in this place the seeds 3 inches asunder and cover with fine soil. When up and growing freely remove all but three plants in a patch, always retaining the most promising. The seed should be sown early in April. The plants may be forced next winter.

Forcing Roses (B. S.).—It occurs to us that when you say your “Maréchal Niels suffered from anticipation of proper root action,” and the fact that the plants are growing in side borders of your Rose house, that you mean the wood was excited by artificial heat before the roots could supply enough sap to keep the growths going freely. Strong growing Roses planted in side borders will soon have a large number of their most important roots in the soil outside of the house. We think you omitted to cover this with a good protection of loose litter, such as heather, gorse, or even mats, which would be a great help when starting the plants early in January. We have carefully considered your difficulty, and also reperused the replies, and can now think of no other probable cause. You cannot expect roots in cold, and possibly frozen ground, to keep pace with the other part of a plant that is in a temperature of from 13° to 22° above freezing point, and more especially so in the case of several degrees of frost outside, which we so often get at the date you commenced.

Age of Lily of the Valley Crowns (Subscriber).—It is somewhat difficult to tell the age after the crowns attain to flowering size, but a one-year-old crown has no ring below the bud, though it generally shows where the leaf sheaths have girdled. As you are no doubt aware, crowns are formed on the runners or underground wires without any top growth, hence, as there were no leaves there could be no leaf sheath rings. Some call such a one-year crown, because it has been formed in the previous year, but it is only an adventitious bud. This the following summer will produce leaves, nothing else, and if examined in the winter will have a distinct ring on the root-stem just below the bud or crown. It is properly but one year old, though often called two, and may or may not produce flowers the following season. If left alone or transplanted it will give another ring on the root-wire as in the preceding season, but higher up—that is, nearer the crown, which has advanced accordingly. It is two-year-old as clearly indicated by the two rings corresponding to the respective years' growth. Such two-ringed crowns will usually flower strongly the following season, either indoors or outside. If the latter, it will again form another ring, and so on year by year indefinitely. Now for your specimens. No. 1 range in our opinion from five to seven years old, and have apparently been weakened by flowering in previous years. No. 2 appear from three to five years old, but only one the latter, and they have not been weakened by flowering in former seasons.

Specimens—Rhubarb (Young Gardener).—The Crotons were all dead and unrecognisable, due entirely to misdirection. Rhubarb is neither a fruit nor a vegetable, but when exhibited is frequently classed as a “fruit” because its stalks are used for tarts, pies, and puddings, never in any form cooked as a vegetable. Please read rules above before sending again.

Conifers not Healthy (Scotland).—The spray certainly shows no trace of ill health. We should confine any pruning to shortening straggling growth, so as to impart symmetry and compactness. Nothing answers better for these trees than a top-dressing of turfy loam with one-third of leaf mould or old cow manure, not applying more than a couple of inches thickness from the stem outwards as far as the branches extend. Now is the best time for cutting away dead branches, or if frosty defer until April.

Growing Mushrooms in Trenches (W. F. G.).—There is no book that treats separately of this mode of culture, but the directions given in “Mushrooms for the Million” could be easily adapted. There have been several contrivances for doing away with glass for growing Cucumbers and Melons. The transparent papers we have seen in use have not been very satisfactory. Perhaps we have not seen the improved article. Inventors should advertise, or perhaps some correspondent will give readers the benefit of their experience.

Watercress in Boxes for a Pool (Constant Reader).—Watercress may be grown in boxes, but preferably in pans, which are less liable to get out of order than wooden boxes. Whether boxes or pans are used they should have openings at the bottom, and be drained similar to those for land plants with potsherds, placing in from 4 to 6 inches depth of good loamy soil. Well rooted young offsets should be planted about 6 inches apart, and the boxes or pans so placed in the water that their edges or soil will not be covered with water more than an inch or two. The green-leaved variety grows the freest, and we think harbours most insects, but the large brown-leaved is the best in flavour.

Anemone (X. L.).—The Anemone flower appears to be one of the many varieties of the Chrysanthemum-flowered called Chapeau du Cardinal, the tubers of which may be planted early in October, about 6 inches apart and 3 inches deep, when, the varieties being mixed, they make a splendid display. After flowering, the tubers should be lifted, dried, and stored away in a cool place in sand. For flowering in pots they should be potted in September in a compost of two parts turfy loam and one part leaf soil, with a sixth of sharp sand. Place in a frame and introduce to heat—a greenhouse temperature—in November or December. We are not aware that it can be had in flower in January, but it is well worth trial.

“Fever Fly” on Lettuce Root Stems (J. A.).—The flies are certainly a species of Dilophus. The legless grubs accord with those of *D. vulgaris*, only they are larger, as also are the flies. The only way to make certain of the identity of the fly would be to rear some of grubs and have the flies from the pupæ cases. No doubt the manure would favour the fly in a dry season, but we have had no experience of the kind, though suffering from the attacks of the lesser or spotted crane fly, *Tipula maculosa*, to a serious extent. For this we found a dressing of gas lime advantageous, and it acts well on Dilophus, which in the larval state bears a close resemblance to the grubs of the smaller crane fly larvæ, but is not more than half the size. The preventives given in the issue of February 16th are the most successful we have tried.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. P.).—*Galax aphylla*. (T. H. B.).—The light coloured flower is *Orchis tridentata*; the dark one is *Orchis longicorn*. (H. M.).—1, *Acacia cordata*; 2, a *Euonymus*, probably *latifolius variegata*, but specimen rather too small for positive identification. (A. W. P.).—1, *Libonia floribunda*; 2, *Cymbidium eburneum*; 3, dead, 4, *Euonymus radicans variegata*. (V. B.).—1, *Celsia cretica*; 2, *Iris fimbriata*; 3, *Anthericum variegatum*.

TRADE CATALOGUES RECEIVED.

- W. Atlee Burpee & Co., Philadelphia.—*Seeds That Grow*.
H. Cannell & Sons, Swanley.—*Floral Guide*.
Cooper, Taber & Co., Ltd., 90, Southwark Street, S.E.—*Wholesale List*.
E. P. Dixon & Sons, Hull.—*Farm Seeds*.
Ellwanger & Barry, Mount Hope Nurseries, Rochester, N.Y.—*Trees and Shrubs*.
A. Perry, Winchmore Hill, N.—*Hardy Plants*.
F. R. Pierson & Co., Tarrytown-on-Hudson, New York.—*Seeds*.

COVENT GARDEN MARKET.—MARCH 15TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Grapes, lb. ...	1	6	St. Michael's Pines, each	2	6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0	Onions, bushel ...	3	6
Beet, Red, doz. ...	1	0	Parsley, doz. bnchs. ...	2	0
Carrots, bunch ...	0	3	Parsnips, doz. ...	1	0
Cauliflowers, doz. ...	2	0	Potatoes, cwt. ...	2	0
Celery, bundle ...	1	0	Salsafy, bundle ...	1	0
Coleworts, doz. bnchs. ...	2	0	Scorzonera, bundle ...	1	6
Cucumbers ...	0	4	Seakale, basket ...	1	6
Endive, doz. ...	1	3	Shallots, lb. ...	0	3
Herbs, bunch ...	0	3	Spinach, pad ...	0	0
Leeks, bunch ...	0	2	Sprouts, $\frac{1}{2}$ sieve ...	1	6
Lettuce, doz. ...	1	3	Tomatoes, lb. ...	0	4
Mushrooms, lb. ...	0	6	Turnips, bunch ...	0	3

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ° ...	2	0 to 3	Lily of the Valley, 12 sprays	0	6 to 1
Asparagus, Fern, bunch ...	2	0	Marguerites, doz. bnchs.	4	0
Azalea, white, doz. bnchs.	3	0	Maidenhair Fern, doz.		
Bouvardias, bunch ...	0	4	bnchs. ...	6	0
Carnations, 12 blooms ...	1	6	Narcissus, doz. bnchs. ...	1	0
Daffodils, single yellow, beh. 12 blooms ...	0	4	Orchids, var., doz. blooms	1	6
Daffodils, double, bunches	0	4	Pelargoniums, doz. bnchs.	6	0
Eucharis, doz. ...	2	0	Roses (indoor), doz. ...	2	0
Freesia, doz. bnchs. ...	2	0	„ Red, doz. ...	6	0
Gardenias, doz. ...	4	0	„ Tea, white, doz. ...	2	0
Geranium, scarlet, doz. bnchs. ...	6	0	„ Yellow, doz. (Perles)	2	0
Hyacinths, Roman, bunch	0	6	„ Safrano, doz. ...	2	0
Lilium lancifolium, white	0	0	Smilax, bunch ...	2	0
„ longiflorum, 12 blooms	4	0	Tulips, bunch ...	0	6
Lilac, bunch ...	3	0	Violets doz. bunches ...	0	6
			„ Parme, bunch ...	2	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0	Foliage plants, var., each	1	0
Aspidistra, specimen ...	5	0	Lilium Harrisii, doz. ...	24	0
Crotons, doz. ...	18	0	Lycopodiums, doz. ...	3	0
Dracæna, var., doz. ...	12	0	Marguerite Daisy, doz. ...	6	0
Dracæna viridis, doz. ...	9	0	Myrtles, doz. ...	6	0
Erica various, doz. ...	9	0	Palms, in var., each ...	1	0
Euonymus, var., doz. ...	6	0	„ specimens ...	21	0
Evergreens, var., doz. ...	4	0	Pelargoniums, scarlet, doz.	8	0
Ferns, var., doz. ...	4	0	Solanums, doz. ...	6	0
„ small, 100 ...	4	0			



FIELD CABBAGE.

In these days, when the return of low prices for corn makes the farmer turn again to his live stock to help him through the wood, the question of sound and economical food is a serious one.

Prices of dry adjunct foods, cake, offal, corn, and grains or culms, have been very high, or at least high as regards prices to which we have been recently accustomed; it is therefore more than ever necessary to make the land produce its best—i.e., the best of which it is capable in the shape of food for man or beast. Food for man is Wheat, and the price at present being 27s. per quarter, it is easy for every farmer to estimate the profit or loss on growing an acre of Wheat.

But what is the best food for live stock? We answer without hesitation, "Cabbage." A good plot of Cabbage is never without a useful purpose; with a succession of Cabbage from midsummer to Martinmas the flockmaster need have little anxiety as to the welfare of his sheep. Some people object to the Cabbage crop as being an expensive one; so it is, but good things are not usually acquired without cost, and an acre of good Cabbage will feed twice as many sheep as an acre of Turnips, in addition to being much more

digestible, and therefore better calculated to keep the animals in a healthy condition.

Any moderately good soil will grow Cabbage, but we should not recommend light sandy land as being likely to grow a satisfactory crop. With good land, however, there is every necessity for high cultivation. It is almost impossible to overfeed Cabbage, but at the same time it is useful to know what manures have the most telling effect in proportion to the cost.

For July and August use the seeds should have been sown (the first week of the previous August and planted out about November 1st. For later use the seed may be drilled early in April, at the rate of 3½ lbs. per acre, and for succession as late as May 14th. The previous preparation of the land is important; it must have been well worked and got as nearly to the state of a good Turnip mould as possible. Any requisite cleaning should have been done in early autumn, then twelve to twenty loads of farmyard manure should have been ploughed in if possible 8 or 9 inches deep.

The spring stirring will possibly bring some of this to the surface; but it does not matter, as the last ploughing will again bury it. A few days before drilling the land should be ploughed about 4 or 5 inches deep, then well harrowed and rolled, and the sowing completed at once.

As noted above, good soil and plenty of manure are the first two requisites for the growth of Cabbage; but, as we have before remarked, the crop is one that can hardly be overdone with kindness, and the use of suitable artificials will not only bring an increased yield of produce, but materially help succeeding crops; for Cabbage is really, when, as is so often the case, carted away for use on grass, an exhaustive crop. The immense weight of succulent food, though calculated to benefit the land on which it is consumed, must tax the resources of the land on which it is grown; therefore it must be liberally treated, so as to benefit materially the present crop and leave the land in condition to produce paying crops in the future.

We should not advise the use of any large quantity of phosphatic manure, as it will not be necessary in addition to the phosphates contained in the natural manure, and we should prefer to save the phosphate and apply it to the succeeding crops as needed.

Ammoniacal manures, such as nitrate of soda and sulphate of ammonia, if used judiciously, can be used with good financial results; but, strange as some people may think it, the use of salt with the ammonia has been found to give a great increase of Cabbage. Whether used with nitrate or sulphate, salt has been found much more valuable than phosphates; whilst the latter had very little appreciable effect, the result of using salt was most markedly and satisfactorily apparent. The effect of kainit was only in proportion to the amount of soil therein contained.

Given a good supply of yard manure, we should recommend in the way of artificials 3 cwt. superphosphate, 3 cwt. salt, and 1 cwt. sulphate of ammonia per acre, sown broadcast and harrowed in before the seed; 1½ cwt. nitrate of soda sown broadcast immediately after the plants are singled out.

One great point in the growth of Cabbage, as in that of all root crops, is the constant use of the horse or hand hoe; the surface must be kept stirred until the plants begin to take full possession.

There is an idea, and it is a very prevalent one, that stirring the surface assists evaporation and adds to the ill effects of a drought. The opposite is really the case, for to prevent evaporation the land must not be allowed to crack, and to prevent cracking constant movement of the surface soil is the only remedy.

Having got a Cabbage plant, then we must keep the skerries constantly at work and the hand hoe working between the plants. When the plants begin to get large enough to make such work difficult, stop it and leave them in undisputed possession.

WORK ON THE HOME FARM.

In some of the colder districts, such as the high wolds, much spring corn has been sown and has gone in satisfactorily. We ourselves, being on warmer soil, have waited for the nearer approach of Ladyday, and

now find considerable hindrance to the continuous progress of the drill owing to the severe night frosts. Strong white rimes, with ice an inch thick, have such an effect on the land that even March sunshine cannot soften it until afternoon, so that less than half a day's work at drilling is really possible. We are struggling on, however, for the soil has become fairly dry, and the seed will be better in the ground than in the granary.

The lambing is proceeding with varying results; as a rule there is a small loss of ewes, but the crop of lambs leaves something to be desired. We hear of one or two serious cases of loss amongst the ewes which are difficult to account for, roots certainly not having been abnormally plentiful this year, whilst the season has been mild, and there have been no frozen Turnips.

The very early lambs have done very well and will be soon ready for slaughter. One sees so many early lambs about nowadays that they do not realise the price they did a few years ago; the early lamb breeder having been observed catching the worm (in the shape of 1s. 3d. per lb. for lamb), and having had in consequence many imitators.

The young cattle are doing very well, quite fast enough, for now we have so many hours' sunshine they may easily be overdone in the matter of food; they must not be kept too closely housed, but allowed half a day's run in the open yard, and in a week or so a whole day, and so gradually hardened for turning out.

But, alas! the frosts have not only nipped the young grass shoots, but discouraged the immediate growth of more, so it is soon enough yet to talk of turning out.

We were just in time to get the Wheat rolled before the frosts set in; notwithstanding the cold nights the appearance of the plant is greatly improved, and a good rain would produce a more marked advance. As a rule Wheat is not so forward, and does not look so well as last year.

We have occupied the mornings with cross-cutting the fallows, but have not been able to work any of them yet: fortunately little remains to do in the way of cleaning.

THE NATIONAL POULTRY TEST.

It will be in the recollection of most agriculturists and other poultry keepers that the above test commenced on the 1st of March, 1898, and closed on the 1st of this month. As considerably over one million prints of the test circular were distributed through the post and press columns, it is hoped that a large number of results will come to hand during the next week or two, and which I hope to tabulate and publish later on. As considerable public interest and expectation exists as to these returns, perhaps you will allow me to give particulars of the first received as it will be of special interest to poultry keepers who are obliged to restrict the range of their poultry to very narrow limits.

The success obtained by the flock of fowls in this return confirms the last paragraph of the poultry test circular, in which I said:—"My thirty years' experience in poultry keeping leads me to believe that results will be forthcoming from these tests calculated to both astonish and impress."

GLOUCESTERSHIRE.—Results obtained from 1st of March, 1898, to 1st March, 1899, from twenty hens confined within a yard 36 yards by 16. Yield of eggs:—March, 424; April, 446; May, 441; June, 444; July, 372; August, 308; September, 236; October, 182; November, 200; December, 143; January, 222; February, 291. Total, 3709.

Dr.					
To 20 hens at 3s. each	...	...	...	...	£3 0 0
Poultry house 30s., appliances 10s.	...	...	...	...	2 0 0
5 per cent. interest on capital	...	...	...	...	0 5 0
To cost of corn and meal	...	...	...	...	4 11 0
Green food	...	...	...	...	0 5 0
Two sittings of eggs	...	...	...	...	0 2 0
Labour at 3½ hours per week	...	...	...	...	1 10 4
					£11 13 4
Cr.					
To 20 hens at 2s. 6d.	...	...	...	...	£2 10 0
10 pullets reared at 3s.	...	...	...	...	1 10 0
Eight cockerels at 2s.	...	...	...	...	0 16 0
3709 eggs at 1s. per dozen	...	...	...	...	15 9 0
Manure at 15d. per head...	...	...	...	...	1 10 0
					£21 15 0
Contra	...	...	...	...	11 13 4
Profit 10s. 1d. per head					£10 1 8

NOTE.—As it is necessary that certain items should be common to each balance-sheet to fairly compare one return with another, I have fixed the price of each flock of fowls subjected to the test as though they were purchased in at 3s. per head at the start and sold out at 2s. 6d. at the close of the year. I also fix a common price for roosting the fowls in a wooden house at 30s. for twenty head or £2 for forty head, and the value of the manure at 15d. per head or £1 10s. per ton. The labour question is also dealt with upon the same lines. Attendance on each field poultry house

at a distance from home six hours per week; and homestead houses at three and a half hours. Lads' wages 11s. per week. The above prices are as fair an average as it is possible to fix, to compare the true merits of the different birds tested and profits realised.

The somewhat high average price obtained from the above yield of eggs is accounted for by the facts (1) close proximity to a town market, (2) large size of eggs, (3) large number laid through the winter months. The cost of purchased food, it will be seen, is returned at about 1d. per head per week, but this was augmented by certain kitchen refuse which would have been otherwise wasted. This scrap refuse from a family of six no doubt much conduced to the laying properties of the flock, which attained the high average of 170 eggs per head, and this, after deducting 300 eggs as the estimated yield of the ten pullets reared and which laid through the winter.

I trust that the highly satisfactory profit of 10s. 1d. per head shown by this return will encourage many poultry keepers to forward me their balance-sheet, although they may not have kept their stock strictly upon the poultry test rules.—K. B. DE LA BERE, *Burbage Hall, Hinckley*.

P.S.—The accuracy of the above return may be relied on. The eggs were recorded daily and the invoices of food purchased carefully filed. Let me, however, warn enthusiasts who, after reading the above, think that by setting up twenty hens they may attain equal success. This may be possible, but is highly improbable. A profit of 5s. per head is seldom exceeded with flocks of forty head, although 8s. per head is often realised where only a dozen or so are kept under favourable circumstances.

OUR LETTER BOX.

Poultry (O. F.).—As the buff Orpington is, so far, the nearest approach to the combination, in one fowl, of more than mediocre table and laying qualities, we would certainly not advise the introduction of an Indian Game male to a pen of buff Orpington hens. The progeny of such a union would have broad breasts, but the flesh would be coarser and the hens very indifferent egg producers. Of course Indian Game-Dorkings are the largest table fowls, the breast receiving breadth from the former breed and depth from the latter. Whether, however, such fowls are of the finest quality is a matter of opinion and a subject that is frequently debated; albeit, if properly finished, they sell readily, and at remunerative prices, in the London and several provincial markets, where the chief desiderata in a table fowl are abundance of breast meat, white flesh and legs, and small offal. The flesh of buff Orpingtons is beautifully white and of excellent quality, characteristics which command for the fowls free disposal in almost any market. We have not personally worked Procter's "Reliable" incubator, but it is reputed an excellent machine. Provided the male bird is vigorous, six hens may, in a confined run, be permitted to run with him at this season. Fowls under such conditions require careful and unremitting attention. Several things conduce to "chicks dead in shells" in incubators. One of the most common are weak germs, owing to the fowls from which the eggs were obtained being immature. Another frequent cause is the retention of eggs for too long a period before they are placed in the machine. If satisfactory results are desired with incubators the eggs used should be as fresh as possible. Vibration is also accountable for many dead and crippled chicks, therefore no better place for the successful working of an incubator could be utilised than an ordinary cellar. Much valuable information regarding the management of incubators is at the present being published by our contemporary *Poultry*.

METEOROLOGICAL OBSERVATIONS.

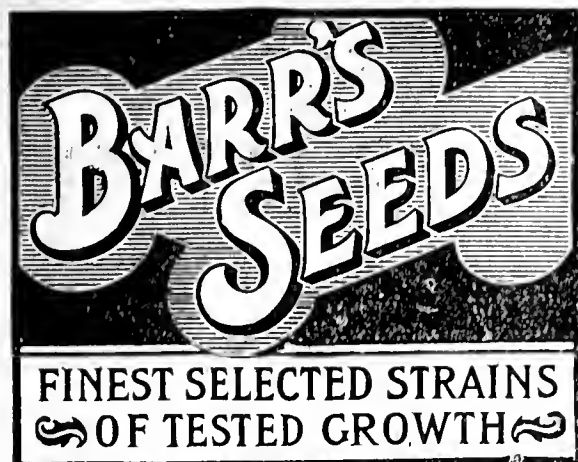
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
March.		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	5	30.235	35.4	32.2	N.	37.8	43.4	28.8	71.8	25.0	—
Monday	6	30.111	35.8	32.1	S.	37.0	44.4	25.2	74.4	22.1	—
Tuesday	7	29.708	27.7	27.7	N.W.	36.2	48.9	22.9	76.1	21.6	—
Wednesday	8	29.613	37.6	37.1	W.	36.0	50.6	26.3	85.2	24.7	0.087
Thursday	9	29.082	40.8	38.9	W.	37.9	50.6	37.7	86.7	34.9	—
Friday	10	29.855	38.8	37.2	W.	38.1	51.2	32.3	94.3	28.1	—
Saturday	11	30.305	40.4	40.4	S.W.	38.7	53.8	36.1	72.3	30.9	—
		29.844	36.6	25.1		37.4	49.4	29.9	80.1	26.8	0.087

REMARKS.

5th.—Bright sunshine throughout.
6th.—Fog early; sun from 9 A.M., and bright night.
7th.—Rather dense fog till 10 A.M., bright sunshine after.
8th.—A little fog early; alternate cloud and sun during day; rain at 11.30 P.M.
9th.—Rain till 3 A.M. and spots of rain at 10.15 A.M.; sunny at times in morning; bright afternoon and evening.
10th.—Bright sunshine almost throughout.
11th.—Overcast and humid.
Another fine week, not so cold as the previous one, but the minima still low.
—G. J. SYMONS.



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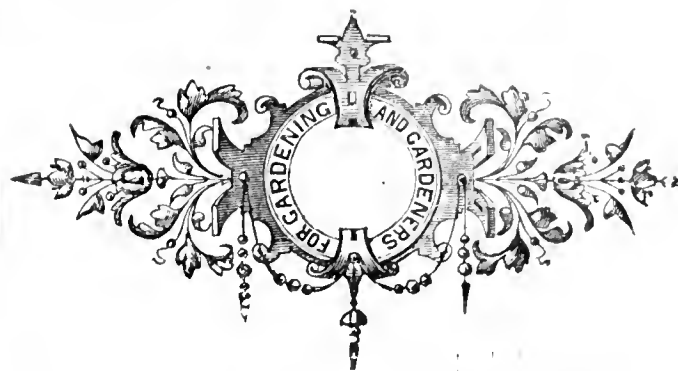
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Journal of Horticulture.

THURSDAY, MARCH 23, 1899.

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COVERING VINE BORDERS.

IN my opinion there is a decided objection to covering outside Vine borders, as being injurious to the health of the Vines. My reason for penning these notes is because I think that by recording my experience in this matter it may possibly be the means of economising labour in gardens where it is none too plentiful, and at the same time bring about a larger yield of fruit of improved quality.

In my younger days I followed the example of my elders, and men who had more experience, and annually covered the outside Vine borders in my charge with quantities of leaves and partially decayed manure to keep them in position. Previous to applying the leaves and manure some 3 or 4 inches of the surface soil was removed, and in place of it was substituted an equal quantity of fresh fibrous loam and decayed manure.

Upon examining the borders in spring after the removal of the covering it was found that there were fewer healthy roots than in the previous autumn, and this decay was attributed to the sodden condition of the border brought about by the covering preventing the admission of air to the soil. Whenever there is a quantity of fermenting material placed upon a Vine border it may cause the production of thick fleshy roots, which decay on the removal of the covering, and this leaves the Vines in a worse condition than if such roots had not been produced.

When a statement is made to me that is at variance with recognised custom, I invariably inquire what proof can be adduced in support of it, and the question may properly be asked: What proof have I to offer in support of my statement that Vines are benefited rather than injured by leaving the borders fully exposed to the influence of the weather?

After due consideration, and a certain amount of anxiety, I decided, in the autumn of 1879, to dispense with the orthodox winter treatment of outside Vine borders. A better season for testing the advantages or otherwise of the system could not have been chosen had the

They were not more than 18 inches in the elevated above the level of the surrounding not only penetrated from the upper surface, but from every direction.

year, 1880, the buds burst into leaf more freely in previous years, and the Vines carried a good which shanking was entirely absent. Had the destroyed the result would have shown itself either smaller berries, or in shanking, but none of these the experiment here mentioned I have never outside Vine borders during the winter months, to do so in the future. Subsequently I have of Black Hamburgh Vines—which ripened the of May—in the same way, with satisfactory

Vine roots, in soil of suitable texture and in good hardy, and are in a much better condition supporting the Vines in a vigorous growth placed in a position where artificial heat is generated the year when comparative rest should be gained, where the material is exhausted by fermentation prevents air and the heat of the sun from reaching thereby elevating the temperature at a time when it

W. NEILD, *Holmes Chapel, Cheshire.*

ASPARAGUS CULTURE.

commonly adopted for the formation of Asparagus planting roots, and raising from seeds. Both have as and are equally worthy of consideration. The undoubtedly the quicker, and is therefore preferable sired as soon as possible. Where this is not the and for succession, seed sowing is recommended sure way of producing lasting results. At the remembered that as the Asparagus is to be a permanent to begin with is often economical. A free open chosen with a porous sub-soil. Stagnant moisture to Asparagus, and if it exists draining must be With a deep fertile loam to deal with, trenching a dressing of half-decayed manure to the subsoil of medium into a good friable condition. If the tive nature, a favourable opportunity should be enter for another breaking up and the incorporation such as road-scrappings, coarse sand, or lime a dry workable condition at the end of March, a roughly decayed manure may be dug in about a the surface be broken up and made smooth prepara-

that a decision must be arrived at respecting the the bed. Asparagus beds vary in this respect, has proved the success of a particular method is ing it. A convenient width for the beds is about alley of 2 feet between each. All cutting and can then be performed from either side without s. A suitable day, when the ground is moderately d to be chosen for sowing, and a 4 foot bed will

wet and inferior, to grow Asparagus courting failure; therefore, to grow Asparagus unsuitable for it special care must be given to the beds. Begin by marking out the ground where and remove the top spit of the best soil. A coating material may be placed on the subsoil after broken and then prepare a compost for the make up of consist of the soil taken out, with free additions of scrapings, sand, turf, leaf mould, lime rubbish. When this is spread evenly on the drainage it will be 6 inches to a foot above the ordinary level, which will Seeds may then be sown on the lines indicated above able to obtain a quicker return the planting of is preferable. The middle of March is a good time for Asparagus, and roots which are young and vigorous better returns than those obtained from old and plantations.

The planting may be done in rows in the same for seed sowing. The roots should be deposited in the rows, and the crowns be covered with soil. Failures with transplanted Asparagus may be due to the condition of the roots than to any other cause should they be allowed to become dry through exposure, and if obtained from a distance the sooner from the packages to their permanent quarters the planting is completed smooth over the surface with of good manure, as this will serve as a protection to which, after transplanting, are liable to suffer from

In addition to the annual dressings of animal manure benefited by the judicious applications of other manures undoubtedly good for the crop, and in coast districts seaweed are given with excellent results. So common this custom of salting Asparagus beds become tedious without a thought as to the conditions, and little harm than good by making the medium "soapy" is best applied when growth is commencing in the dressing. Occasionally light dressings of nitrate of soda during the cutting period are beneficial, but after then they should be stopped. Liquid manure from the farmyard applied during the first stages strong growth, and stout stems are invariably the good crowns. When under good cultivation the the to the time over which some beds last, and ill-effects often be seen in old-established gardens, where the often considered to be as much a permanency as the Asparagus. There is no great variety in the vegetable, and the most common are Early Argenteuil and Connoyer's Colossal.—C

ORCHARD SPRAYING IN NOVEMBER.

HAVING been asked by a farmer friend to write on this subject, and as the present is an opportune time, I am hoping there may be useful suggestions to farmers.

Potash Spraying.—This, to clean the bark of trees and to destroy insects lodging in the crevices, is done in Canada about April, whilst the snow is still on the ground, the buds open. For this purpose $\frac{1}{2}$ to 1 lb. of caustic potash to 1 gallon of water is employed. The mixture is mounted in a cart or low waggon, the men are provided with macintoshes to protect their clothes, and in some cases a cover over the horse; the Apple trees are sprayed on the trunks only are to be washed, this is done at

is used for caterpillars and other chewing
an equal part of lime should be added to
acid which may exist in the Paris green ;
to 40 gallons of water. The pumps are
casks holding 40 gallons, and are drawn
on a low waggon with a cranked axle.

the Bordeaux mixture is to take a 40 gallon
suspend in it 40 lbs. sulphate of copper in a
the solution a strength of 1 lb. to 1 gallon.
ne lime, which is slaked and kept covered
d, the barrel to which the pump is fixed
4 gallons of sulphate of copper solution
t of about 4 lbs. lime is stirred up and
wire strainer at the bottom of a funnel.

l is stirred and then tested to see whether
l. For this purpose a solution of ferro-
n 1 pint water, is used. A cupful of the
arrel, to this a few drops of ferrocyanide
ns it black more lime should be added,
eut lime is present.

ne tries how many spoonfuls there are in
this quantity, placing it in a cup, add
and then add to the barrel of spraying
sed without Bordeaux mixture an equal
ded. Wooden or copper vessels, not iron,
mixture. I need hardly remark that for
r his best clothes and hat.

pumps I saw in Canada were the Pomona,
cturing Co., Seneca Falls, New York, and
orley, Benton Harbour, Michigan, U.S.A.
ss working parts, about 10 feet of hose,
about 8 feet long, usually employing a
have procured one of these, and have had
s like a garden engine, and am at present
hall be pleased to show the apparatus to
asonable questions in reference to spraying.
e, Swanley.

IN THE GARDEN.

AS A SOURCE OF PLANT FOOD.

rent writers told us that 95 per cent. of
s derived from the atmosphere, and only
he soil. This is correct, and yet it is not
better if they had said that the 95 per
r and water, and that 5 per cent represents
they take from the soil.

may say that the water comes from the
quite true ; but did not the 5 per cent. of
source in the early days of the earth's
ct that the water which falls as rain first
rins clouds, and then falls to the earth to
the roots of plants ?

taught us that the atmosphere consisted
oxygen gases, with a little carbonic acid
ld us that there were other substances,
d, ammonia, and sulphuric acid, but these
uantities as to be of no serious considera-
s, however, during the past four years
riters of chemistry to revise their works
atmosphere, for he has added to the above
elium, metargon, and neon, but whether

carbon. Well, having made this clear, if we write th
everyone must know that in this there is only one part
one part of carbon. This latter substance is known by
carbon monoxide. Our best men in the botanical worl
they are of opinion that when the carbon dioxide has ga
to the tissues of the leaves, under the action of sunlig
colouring matter the carbon dioxide is changed into car
In an early article we pointed out that water consist
elements hydrogen and oxygen, and was known by the
Water enters into the roots of plants and passes up the
leaves. Under the action of sunlight and chlorophyll th
broken up. The hydrogen being separated from the
with the carbon monoxide, and the first organic subst
This chemical compound is known by the name of for
and formula CH_2O .

Looking backwards, again, we may see that during
of this body one part of oxygen was separated from the
during its conversion into carbon monoxide, and the one
was also separated from the hydrogen when the chang
water. These two parts of oxygen unite and escape
sphere, and this is what we called the liberating and
oxygen.—W. DYKE.

TOMATO CULTURE.

(Continued from page 218.)

EARLY, successional or main, and late crops of
usually grown with the aid of pots, boxes, beds, or bor
the former are usually employed in structures temporar
Tomato culture. The system offers the advantages
control, and occupation of positions not otherwise availa
for single plants may be 9 or 10-inch, this being a very
amateurs or for fruiting in any suitable structure or
general purposes, however, especially for the robust
heavy cropping varieties, 11 or 12-inch pots are better.
two plants in a pot—12 or 13-inch pots are most service

The pots must be well drained, one large crock bein
each opening, then some rough crocks put in to ju
side apertures, if any, with a few finer over them, and
drainage thus provided place a layer of rough turfy loa
and brought up to such height that the top of the bal
the plant is introduced will be a quarter the depth of
the rim or upper edge. The space thus left will allow fo
The balls of soil containing the roots at the final potting
a thoroughly moist condition, so as to turn out of the 5
quite clean, and the soil used for potting be in neither
state, but moist, and packed firmly round the roots. Li
no good for Tomatoes, or anything else required to make
sturdy, productive growths, therefore pot firmly.

If the plants are to be trained to trellises, they wil
stakes to support them from the soil to the lowest wire.
be stood on a shelf or stage over the hot-water pipes, "
not less than 13 inches or more than 18 inches apart,
double those distances, calculating from the centre of the
stakes, about 3 feet 6 inches in length, will be required
plants. Both the "single" and "pair" plants can be st
or bed, where the height of the structure permits, and
they can have an unobstructed light.

Boxes are preferred by some growers to pots, as not b
to breakage, more plants can be grown in a given space
not require so much water. All kinds of boxes are utilis
Tomatoes, both indoor and outdoor. A box 12 inch
8 inches in breadth, and 6 inches in depth, all inside me
about the smallest size I have seen used for a single pl

to the trellis. The boxes are handy for placing on wooden stages at the sides of span-roof or other structures, thus utilising them for Tomatoes in summer without interfering with the arrangements for plants in the winter. With the plants 2 to 3 inches from the sides (there are no ends in a square box), stakes can be placed outside, so that plants will be trained about 15 inches apart, allowing proper space between the boxes.

Boxes 3 feet long, 1 foot 6 inches wide, and 1 foot 2 inches deep, are hardly portable when occupied with plants. They are serviceable for placing at the end of a Cucumber house, or along the sides of structures in continuous order for plants to be trained to trellises. Single plants can be put in 15 inches distance, and fast or strong-growing varieties 18 inches, or the plants introduced 18 inches asunder on both sides of the box on "opposite vacancy" order, the outer plants, or those next the side of the structure, being trained to wires about 8 inches from the glass, and the inner ones to a trellis a foot lower. If stood at the ends of houses four pairs of plants may be placed in a 3-foot long box, or even five pairs for early work, arranging them conveniently for staking outwardly on each side.

After a red-hot iron has been run through the drainage holes to char the edges, paint once inside and three times outside when perfectly dry, with a preparation of Stockholm tar thinned to the consistency of thin paint with petroleum or paraffin oil, allowing each coat to dry before following with the other. If desired a coat of lead and oil colour may be given to harmonise with the woodwork of the structure. Drain the boxes thoroughly, and place in so much soil that the top of the ball of the plants will be a quarter the depth of the box below the upper edge, making the compost below and around the roots quite firm, then in the boxes, as well as in pots, space will be left for top-dressing the plants after the first trusses of fruit are set and swelling.

—G. ABBEY.

(To be continued.)



ODONTOGLOSSUM CRISPUM SULTAN.

THE display of Orchids at the Drill Hall on the 14th inst. was an exceptionally rich one, for not only were many of the seasonable kinds grandly staged, but new hybrids and varieties were numerous and of excellent quality. Such being the case, this section of the show was the centre of more than ordinary attention, and visitors—expert and otherwise—clustered before the tables. One of the most charming of the Odontoglossums was Sultan, of which the woodcut (fig. 57) will convey an admirable idea as to size and form. It is one of the handsomest varieties that we have seen of late, and the first-class certificate recommended by the Orchid Committee to the exhibitor, Mons. Jules Hye, was well deserved. The whole of the central portion of the flower is bright chocolate red, with margins and very occasional bars of white. The large white lip is very brightly spotted. The spike shown carried three flowers.

DENDROBIUM BOXALLI.

THIS pretty plant is doubtless a natural hybrid, its reputed parents being *D. crystallinum* and *D. Devonianum*. It resembles the latter most both in the flowers and habit, and is equally beautiful. The plants now in flower should be kept cool only as long as they remain dormant. As soon as signs of growth appear, they should go at once into a brisk moist heat in a house where they can get ample light. Growth is most free from small pots or baskets, in which the roots are rather crowded. They cannot endure a large amount of compost about them. When the growth is fully made and ripened, a good rest should be given in a cool house.

HYBRID PHALÆNOPSIS.

THE cut of the fine new hybrid *Phalænopsis* on page 195 reminds one how numerous these lovely hybrids are getting. The first to flower in this country was *P. intermedia*, and this with its fine varieties, *P. i. Portei* and *P. i. Brymeriana*, had long been known, and suspected to be a natural hybrid. This Messrs. Veitch proved by raising and flowering it from seed, the result of crossing *P. Aphrodite*, or as it is better known, *P. amabilis*, and *P. rosea*. The flowering of this kind is a little remarkable, for though for so many years growers had tried without success to hybridise these beautiful plants, only four years elapsed between the sowing of the seed (1882) and its flowering (1886).

A good deal like it is *P. Hebe*, one of Messrs. Veitch's more recent successes, it having flowered in their nursery a little over two years ago. Its parents are *P. leuchorrhoda* and *P. rosea*, so the likeness to *P. intermedia* is easily accounted for. *P. John Seden*, again, is a

beautiful hybrid, well worthy to bear the name of the most successful hybridist living. It also originated under his own hand, and is a cross between *P. amabilis* and *P. Luddemanniana*, the purple spots and markings seen on the latter species being reproduced in the hybrid. Many others of Messrs. Veitch's raising might easily be named; in



FIG. 57.—ODONTOGLOSSUM CRISPUM SULTAN.

fact, Mr. Seden has never looked back since his first success, and has added a lovely section to the most beautiful of Orchid genera.

Other growers have also entered the field, and quite recently Messrs. Hugh Low & Co., of Bush Hill, exhibited a hybrid at the Drill Hall. This was raised from *P. Stuartiana* and *P. Schilleriana*, and had the handsome foliage and flowers that one would expect to see from such a cross. Messrs. Sander & Co., of St. Albans, are also responsible for at least one hybrid, while a look through the houses at either of these large establishments will show quite a number of healthy hybrid plants in all stages of development. The number of hybrids there, although already large, will now increase rapidly, especially as some of the leading private growers are taking up this phase of culture.

SHADING ORCHIDS.

IT is surprising what an amount of care is needed in shading Orchids during the trying days of March and April; we need to be always on the look-out where young assistants have this part of the work under their charge, for either the shading is neglected during bright spells, or it is left down when there is no need for it. Though the injury from the latter may not be so immediately apparent, it is done none the less, for the plants, after our dull sunless winter, require every ray of light possible. Especially in the cool house is this necessary, plants from the high lands in New Grenada and other semi-alpine localities pining for light badly at this time of year.

But they are often in flower, and in order to conserve the blossoms the blinds are dropped, while the young shoots cannot stand the effect under glass of bright sunlight. Just at the present time the value of the lath roller blinds is brought strikingly to notice, these being far better than any description of woven material. During the midday or dinner hour it is always best to have one assistant at least on duty. Sunday mornings, again, have much injury to answer for, and it is quite imperative that whoever is on duty shall be out at the same time as on any other day in the week.

CATTLEYA LAWRENCEANA.

A good form of this fine *Cattleya* is very striking and showy just now. It is a free growing plant where well suited, liking a rather higher temperature and more light than the majority of *Cattleyas*. Not but that it will grow freely enough in a shady house, but there is always a risk of it not flowering unless the growth is well ripened by exposure to sun. The roots of *C. Lawrenceana* are not so large as those of the *labiata* section, nor do they require so much room in pots or baskets. Fine specimens may be reared in the 6-inch size, and plants with only one or two leaves will, of course, need much less room.

Wherever possible keep the plants well up in the house, and avoid syringing. Light syringing on hot days may do no harm, but the water is apt to collect in the young growths to their detriment when a large quantity of it is placed about them. The flower spikes

usually contain from four to eight large flowers, the colour of the sepals and petals varying from nearly white to a pretty deep purple rose, the lip having a fine deep warm purple blotch in front. Though discovered many years ago by Sir R. Schomburgk, it was not introduced in quantity until about 1884, when Messrs. Sanders' collectors found it in British Guiana. According to Mr. E. in Thurm it is usually found in many sheltered positions.—H. R. R.

HYBRID DENDROBIUMS.

USEFUL and showy as are the species of this family, there are many of the hybrids which eclipse their parents, both as regards colour and form. Most of them are good growers, and will repay one for any amount of attention that may be given them. The great aim of the cultivator should be to obtain as large and fine growths as possible, and then to get these thoroughly matured by exposing them to the sun, resting in a lower temperature, and withholding water, taking care that the temperature does not fall much below 50°.

The culture of *Dendrobium nobile* is so well known, and has been given so many times in the Journal, that it is not necessary to repeat it. Let it suffice to state that the majority of the hybrids will succeed under the same conditions. It may perhaps be advisable to mention that the compost should be of the best, and thoroughly well prepared by taking out all the dust and fine particles, and then mixing about the same portion of clean live sphagnum moss. The plants may be grown in almost any receptacle. Some growers prefer pot-shaped baskets, others square ones, but I have yet to learn that any of them are better than a good perforated Orchid pan, such as is made by our leading pot makers.

The hybrids from *D. nobile* and *D. aurum* are no doubt well known, and comprise *D. Ainsworthi*, *Leechianum*, or *splendidissimum*, or its variety *grandiflorum*. Undoubtedly *D. Ainsworthi intertextum* is one of the finest hybrid Dendrobiums yet raised, and in this class I think still we must place the finest and the showiest of them all—namely, *D. Apollo*, and its form *grandiflorum splendidissimum illustre*, which with *rubens grandiflorum* is perhaps without a rival amongst the highly coloured varieties. The whole of these are useful, both to the Orchid connoisseur and to those who only grow Orchids for cut flowers and other purposes. We may now take the *D. melanodiscus* family, with which has been associated *D. Findlayanum*, as one parent or the other. The most beautiful of these perhaps are *Cybele nobiliss*, *pallens*, *Rainbow*, and *Juno*.

Then we have the hybrids, with *D. Wardianum* as a parent, which section, as yet, is not very large, owing to the difficulties experienced in getting flowers to set fertilised with *D. Wardianum* pollen, and *vice versa*, but *D. chlorostete*, *D. e. Owenianum*, and *Aspasia* are most beautiful. I cannot close these notes without mentioning the lovely *D. Venus* (fig. 58), which, though with some growers, like one of its parents, *D. Falconeri*, rather shy in flowering, is still worthy of its place, and should be grown. No Dendrobium I know will stand such a rest as this one, and it must have it to insure its flowering satisfactorily. There are other hybrid Dendrobiums which are well worth a place, but those mentioned will suffice to enable all growers to select for themselves those which are most pleasing to their individual taste.—J. BARKER, *Hessle*.

ORCHIDS AT BOWDEN HILL HOUSE.

At Bowden Hill, near Chippenham, the residence of J. Harris, Esq., Orchids have superseded all other stove and greenhouse plants. Long ranges of houses are wholly filled with them, and evidently the pure air and Mr. W. Penton's able treatment suit Orchids remarkably well. Altogether, 1200 *Odontoglossums* are grown, and at the present time not less than 400 of these are furnished with strong flower spikes. Among them are many good forms, while a large number have yet to be proved. The cooler sections are arranged in two span-roofed houses, where the temperature ranges from 45° to 50°, air being admitted when the latter figure is reached, with the result that clean, healthy growth and well-matured bulbs prevail.

Dendrobiums were a great feature late in February and onwards, some 8000 blooms being expanded at one time. Among the best were *D. nobile* in variety, *D. erassinode*, and *D. thyrsiflorum*. All are grown near the glass, and after having formed strong pseudo-bulbs a thorough ripening, almost amounting to a baking process, has the effect of causing them to flower most freely. They are potted in sphagnum and peat, and those given the most moss are in the best condition both as regards root and top growth.

Cattleyas are flowering grandly, and among them *C. Trianae*,

Schröderi, *Gaskelliana*, *Mossiae*, *Mendeli*, *aurea*, *amethystoglossa*, *Leopoldi*, *Harrisi*, *Warneri*, *gigas*, *Bowringiana*, *Sanderiana*, *Alexandra*, *Victoria Regina*, and *Lawrenceana* in variety are well represented. Several hundred plants are grown, Mr. Harris taking the most interest in this class of Orchids and *Odontoglossums*. *Laelias* are in equally good health, many of them promising to flower grandly. There are enough strong plants of *L. purpurata* in variety, *crispa*, *erispa superba*, *Schilleriana*, *Perrini*, *tenebrosa*, *præstans*, *elegans*, *Dominiana*, and *grandis* to fill a good sized house. Another compartment is devoted to the aneeps section, some of the best varieties of which are *alba*, *Stella*, *Mrs. H. J. Harris*, *Sanderiana*, *albida*, and *Schröderiana*.

Cymbidiums are a speciality at Bowden Hill, and there are numbers of *C. eburneum* in a most promising condition for giving a grand display of bloom. *C. Mastersi* and *C. Lowianum* are in an equally satisfactory state. With these are to be seen numerous plants of *Oncidium tigrinum*, many of them with pseudo-bulbs measuring 11 inches in circumference. Equally luxuriant are the plants of *Odontoglossum grande*, *Cypripediums*, *Oncidiums*, *Chysis*, *Epidendrums*, *Platyclinis*, *Masdevallias*, and *Cœlogynes*, which complete this highly creditable collection of Orchids.—W. I.

"THE ORCHID HYBRIDS."

MR. GEORGE HANSEN, Berkeley, California, writes:—Kindly give me a paragraph in the Journal setting forth that I am anxious to secure the kind co-operation of all Orchid hybrid raisers for the third supplement to my monograph, "The Orchid Hybrids." It will be out some time this summer, and as the material is accumulating so rapidly it seems to be obvious that one index should be printed for all the matter published. I intend to retain the type of such print, and publish only as many copies as I have subscribers, furnishing every purchaser of a supplement with a new index. This appears to be the only way to keep the work up to date and handy.

As to the help desired, I wish everyone engaged in crossing Orchids would furnish me a list of what he has accomplished, regardless



FIG. 58.—DENDROBIUM VENUS.

whether such has been done before at other places or not. It is best to have recorded every cross brought to a successful issue, as it should be known from how many sources our stock originates. Let it be stated in such lists which were the parents, marking the seed-bearing plant; also give date of fecundation and time required to flower the seedling.

SALPIGLOSSIS.—These are beautifully coloured and marked flowers, which make a good display in beds, associating well with Asters. The flowers are well adapted for cutting. Sow seeds now in boxes, prick out the seedlings in other boxes, and transplant to a permanent position in May. Mixed large flowering varieties are the best.—E.



RECENT WEATHER IN LONDON.—The weather in London on Saturday, Sunday, and Monday was brilliantly fine as a whole, though on the morning of the first named day there was a brief spell of semi-darkness. The wind on each day has been cold, but the air is dry and bracing. Snow fell at intervals on Monday afternoon, and again very heavily on Tuesday. Thirteen degrees of frost was registered on Sunday night. Frost was again severe on Tuesday night, but Wednesday opened bright and warmer.

WEATHER IN THE NORTH.—A marked and rapid change took place in the weather of the past week. Up to the 16th the days were pleasant if rather dull; Thursday and Friday were exceedingly bright and warm for the season; by Saturday morning the wind had set into the north, and winter resumed sway. On the mornings of Sunday and Monday 6° frost were registered, and keen northerly winds prevailed up to the evening of the 20th.—B. D., *S. Perthshire*.

MADRESFIELD COURT GRAPE.—At East Thorpe, the residence of Mr. Alfred Palmer, Reading, there is in a somewhat narrow vinery the shortest rods on a Madresfield Court Grape I have seen. The border is 4 feet wide and 18 inches deep. It is also raised so as to bring the Vines near the glass. The rods are only 4 feet long, and have less than that length, for cropping; yet in spite of being thus hard shortened, and also very close pruned, they fruit remarkably well. There are six rods, two coming direct from the main stem and four from a side rod layered into the border. The house is 21 feet long, and contains also three similar rods of Black Hamburgh. The Vines have been planted eleven years. They seem to do wonderfully well so restricted, and bear liberal feeding.

MANETTIA BICOLOR.—A charming and not at all uncommon greenhouse climber is this. The foliage resembles that of *Plumbago* *Larpenæ*, and the flowers those of a *Cuphea*, or the old *Mitraria coccinea*, being tubular, pendent, and scarlet with the points bright yellow. This is much liked by Mr. Woolford, the gardener at East Thorpe, where in a large pot it thrives well, and seems to be always in flower. It is easily propagated by cuttings. Here, too, are great bushes of the old yellow *Coronilla*, old and young *Streptocarpus*, a choice collection of *Orchids*, and spring flowering plants in great variety. In a small Fern grotto *Celogynes* planted in numerous pockets in the rockwork thrive wonderfully and bloom profusely. *Begonia falcifolia*, too, as a basket plant makes a very effective display.—WANDERER.

HESSLE GARDENERS' SOCIETY.—At a meeting of the above Society, held on March 14th inst., Mr. G. Wilson, Swanland Manor, presiding, Mr. H. J. Clayton, of Grimston Park Gardens, Tadcaster, read a highly instructive paper on winter flowering stove plants, his remarks on the culture of *Calanthes* and *Poinsettias* being very valuable. The discussion which followed was of a practical nature. There also was held a decorative competition for under gardeners for a vase of spring flowers, and the Judges appointed were Messrs. W. Pieker and F. Mason, who awarded the prizes as follows:—Mr. O'Donoghue and Mr. Flowers, both of Trauby Croft, first and second respectively, and Mr. Skinner, Bishop Burton Hall, third. The exhibits were of average merit. The usual vote of thanks brought an enjoyable meeting to a close.—J. T. B.

THE READING GARDENERS' ASSOCIATION.—This most energetic and intelligent Society, which has since its birth been instrumental in doing much in the interest of gardening in the Reading district, having recently through his removal from Maiden Erleigh to Sherborne Castle lost the valued services of Mr. Turton as Chairman, is now in danger of losing the services of its excellent Secretary, Mr. John Pound. This admirable gardener, who has been for many years as such to the late Mr. Alfred Sutton, and since his lamented death to his widow, who has also recently died, is experiencing that sort of ill fortune which so often occurs to the best of men after long and faithful service, in having to quit his old situation because death has taken away his employers. There are few vocations that bring such sad changes to men as gardening thus suffers from. It will be a joy for the members of the Gardeners' Association if Mr. Pound can find another worthy place in or about Reading.—D.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, March 28th, in the Drill Hall, James Street, Westminster, 1 to 5 p.m. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. G. Henslow, M.A., at three o'clock.

GERMAN SCABIOUS.—These are very showy when in bloom, and most useful for cutting. Dense heads of flowers are produced on slender stems. Sow the seed now in pots and transplant to a cold frame or boxes. Sturdy, well rooted plants will then be secured for planting at the end of May. Fertile ground enriched with decayed manure and well dug suits them quite well.—E.

ANNUAL CHRYSANTHEMUMS.—There are some good varieties among these suitable for growing in beds or borders, to produce flowers for cutting. In a mixed selection of varieties doubles will be included, *Dunnetti* being one of the best. *Atro-coccineum* and *Burridgeanum* are good singles of attractive colours. Sow and treat as hardy annuals, well thinning-out the plants.—D.

DIVIDING AND REPLANTING RHUBARB.—Large old roots of Rhubarb which have not been disturbed for years might with advantage be lifted, divided, and replanted. Secure several good crowns to each division, or divide a large clump into four. The spot selected for planting them must be well dug and heavily dressed with rich farmyard manure. Give a space of 3 feet between each division. Also mulch the surface with manure.—S.

BIRMINGHAM GARDENERS' ASSOCIATION.—Mr. James Dean (manager to Messrs. Pope & Son, seed department) entertained the members at the last meeting with an interesting lecture on "Nature's Seed Sowing," and particularly alluded to various seeds and seed vessels furnished with appendages, remarkable for the distribution towards suitable quarters. The Maple, Elm, and Sycamore were cited as interesting examples of tree seeds furnished with fan-like adjuncts for their dispersion by the wind; and of the sensitive seed vessels, such as the Gorse, Caper Spurge, Balsam, were familiar examples. Those furnished with burrs, spines, and hooked appendages were no doubt intended as provisions for the dispersion of seeds by the agency of the woolly or hairy skins of animals; the four principal agents being animals, birds, wind, and water. Mr. Dean exhibited several kinds of seeds and seed vessels in illustration of his subject, an interesting one being a plant of the Rose of Jericho (*Anastatica hierochuntica*). In the discussion following, and in which Messrs. W. B. Latham (the Chairman), C. R. Bick, Walter Jones, C. H. Herbert, W. Spinks, and W. Gardiner took the chief part, reference was particularly made to vitality of seeds preserved under certain abnormal conditions. Instances were also adduced of the reproduction of seeds after being buried deeply in the soil for many years. The "Orchid Review," in two vols; also the "Iconography of Orchids," in six vols., splendidly illustrated and bound, have been added to the valuable library of the Birmingham Gardeners' Mutual Improvement Association.

DEATH OF MR. WILLIAM MURRAY, PARKHALL GARDENS.—We regret to record the death of Mr. William Murray, which took place on Saturday, 11th March. On the Sunday previous Mr. Murray (according to his wont) was addressing an Evangelistic meeting when he was taken suddenly ill. He was driven home, and gradually sunk into an unconscious state and expired as indicated. Medical skill could render no assistance. The deceased was sixty years of age, and for thirty-three years acted as gardener to Mr. Livingstone Learmonth. Few men in Scotland have attained such success as a Grape and Tomato grower as has Mr. Murray during the past twenty years. His exhibits, of Grapes especially, have held leading positions at Edinburgh and Glasgow Shows for many years. His fame as a cultivator at Parkhall was widely known, where many admiring visitors went frequently to see the crops or remarkably handsome bunches of Grapes. Last year was equal to any previous season in crop and quality of the fruit. The Vines, too, by firm wood and large glossy foliage, testified to the skill of a master hand. Mr. Murray's talents and zeal for the good of his fellows were widely recognised. Among local institutions, he was a member of School Board at Muravon Side, where his remains were interred on Wednesday, 15th March, and much good has been accomplished by his able assistance and force of character. He leaves a widow and one son. The latter now represents the firm of Wm. Murray & Son, which was formed two years ago by renting a large portion of the extensive ranges of glass at Parkhall and a number of acres of land for market purposes. Mr. Murray's portrait was given in the *Journal of Horticulture* for December 22nd, 1898 page 473.—W. TEMPLE, *Carron*.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
March.										
		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Sunday 12	W.	48.5	45.9	60.5	37.8	—	41.5	41.6	43.5	28.0
Monday 13	E.N.E.	42.8	42.6	54.4	37.3	—	43.7	42.5	43.5	29.5
Tuesday 14	N.N.E.	33.6	33.5	41.1	29.7	—	41.5	42.8	43.5	27.3
Wednesday 15	N.N.E.	32.8	32.0	48.9	28.2	—	39.2	42.3	43.8	24.6
Thursday 16	N.N.E.	35.4	35.2	44.8	27.5	—	38.6	41.9	43.8	22.2
Friday 17	S.S.E.	40.5	39.9	42.6	35.1	—	40.1	41.5	43.8	32.1
Saturday 18	S.S.E.	42.4	41.7	44.9	29.9	—	39.9	41.7	43.8	25.3
MEANS ..		39.4	38.4	48.2	32.2	Total —	40.6	42.0	43.6	27.0

There has been no rain since the 8th inst. The week ending March 18th has been remarkable for five nights and four days of smoky fog, which has left its mark on vegetation.

— THE NATIONAL AURICULA AND PRIMULA SOCIETY.—On page 213 it was stated that the exhibition of this Society would be held on April 19th. This was incorrect, as the date is April 18th, in order that the exhibition may be in connection with the meeting of the Committees of the Royal Horticultural Society in the Drill Hall.

— CHISWICK GARDENERS' SOCIETY.—At the meeting of the Chiswick Gardeners' Mutual Improvement Association on Thursday, March 16th, a paper was read by Mr. R. Lewis Castle, Manager of the Woburn Experimental Fruit Farm, on hardy fruit culture, problems, profits, and prospects. The problems were classed under the heads of tree formation and fruit production, special reference being made to stocks, budding and grafting, pruning, planting, manures, and cultivation as affecting growth or fertility, while as regards the latter particular attention was called to the influence of foreign pollen, and the advantages of interpollination in counteracting sterility. The extreme and average gross returns per acre from fruit culture were noted, and the average expenses, together with the essentials to success. In regard to the prospects it was contended that if the United Kingdom is favoured with peaceful times there is a great future before the cultivator of hardy fruits, because the value of these products as an important part of a healthful diet is rapidly becoming more generally recognised. The discussion was opened by Mr. S. T. Wright, Superintendent of the Chiswick Gardens, who detailed many experiences in support of the principal points. He was followed by Mr. E. Camp, Mr. A. Bridges, Mr. J. Fraser, and several other members, in an animated, interesting, and prolonged discussion, at the conclusion of which Mr. Castle briefly replied on the various points, and the proceedings closed with a unanimous vote of thanks.

— TOWN TREES.—Is the "Irish Farmers' Gazette" quite correct in assuming that Planes make the best town trees because they shed their bark regularly? There are many trees that do well in towns that do not shed their bark, or at least do not do so in the conspicuous way that Planes do; yet may we not conclude that there is with all trees a form of bark-shedding analogous to that of the skin-shedding which goes on in animal life, and is just as efficacious in removing soot or other dirt substances as is seen in the bark-shedding of the Plane? I had thought the primary cause of the value of the Plane as a town tree laid in the thick, hard, leathery character of its leafage. We see the same thing in the Fig, one of the best of town trees, and even room plants are all the more capable of resisting the effects of sooty foul air and fogs the thicker or stouter the leafage. If we take the Lime—a most unsatisfactory town tree—after the middle of summer we find leafage that is thin, and because apparently emitting or becoming coated with a saccharine substance, which attracts aphids, is soon coated with this substance and insect excrement. No such phenomena are seen in connection with the Plane, for its leafage remains clean until the last, and rarely becomes coated with soot or other offensive matter. If I am wrong in these conclusions I shall be pleased to be put right, but at present I fail to see that the bark-shedding theory as put forward by the "Farmers' Gazette" is the correct one. Is it proved that the corky coating we call bark on trees really has stomata or breathing pores to become checked with soot?—OBSERVER.

— HERBACEOUS CALCEOLARIAS AT READING.—The author of Johnny Gilpin in concluding his verse expressed a warm hope that when next his hero rode abroad that he might be there to see. I felt very much as the writer did when he penned this wish, when I saw the other day the remarkably fine collection of plants of herbaceous Calceolarias Mr. J. Martin has grown for Messrs. Sutton & Sons at their Portland Road Nurseries. Whenever these go forth to exhibition may I be there to see them. Certainly the plants are now in luxuriant condition, some of them promising to make a diameter when in bloom of 3 feet, they would present a brilliantly beautiful spectacle when in complete bloom. These will be furnished at the end of May next without doubt, ample evidence that neither in culture nor in form is there anything lacking in herbaceous Calceolarias. The Reading strain is selected with the same care and judgment that is given to other florists' flowers, such as Cyclamens, Cinerarias, Primulas, and others.—D.

— CHESTER PANTON SOCIETY.—At the fortnightly meeting, held on March 18th, Mr. John Taylor, Hoole Hall, and the Hon. Secretary of the Society delivered short addresses on the Potato (in the absence of Mr. John Jackson, who was prevented on account of illness from delivering his paper on Vine Culture). The more practical points dealt with by these two gentlemen were the cutting and sprouting of tubers before planting, the best manures to use, the classes of soils best suited for successful culture, and the best means of preventing the spread of fungoid diseases, so often fatal to Potato crops. The best varieties to use for successional crops were also commented upon, and a collection of some thirty-six varieties staged by members contained excellent samples of Up-to-Date, The Dickson, Sutton's Reliance, Mr. Bresee, Cheshire Prince, Snowdrop, and Clarke's Main Crop, which was generally admitted to be the best flavoured variety yet introduced, although rather behind other varieties in the matter of cropping properties. On the proposition of the President (Mr. John Wynne) a vote of thanks was accorded to Mr. Taylor and Mr. Milb, and Mr. N. F. Barnes, Eaton Gardens, in seconding this, recommended Early Ringleader as being the best and most profitable variety for forcing and for early borders.

— PHYSIANTHUS ALBENS.—In reference to this plant, figured in the *Journal of Horticulture* for February 23rd, I may say that I consider its bad qualities far exceed its good ones, from a bee-keeper's point of view, for anyone who has a plant of it, and will look carefully into it, will find a bee stuck fast in nine out of every ten flowers. The formation of the bloom admits the bee in search of honey, and when its head is inserted into the base it closes tightly round, and prevents its withdrawal. Probably that has something to do with its not fruiting freely in some places, but such is not the case here, as the plant carries large numbers of fruit annually. To anyone having a suitable aspect, and who thought of planting one of them, I would recommend a *Stauntonia latifolia*, or a *Rhynchospermum jasmoides*, as their flowers are more attractive in all ways. The *Stauntonia* also has curious-looking fruit throughout the winter, while the *Rhynchospermum* begins to bloom in June, and continues until late in the summer; its flowers are always acceptable. They will both stand a considerable amount of frost, but in very hard weather they should be covered with a few light Spruce branches. On a south wall 20° will not harm—at least, such is the case here, and the plants now look well.—WM. CAMM, *Battle Abbey*.

— FLOWERS FOR THE WORKERS.—For the past four years Mr. John Crosfield, a prominent gentleman in Warrington public life, has made arrangements for the distribution of Hyacinth bulbs to any of the householders of the working class who should apply for them; and to the most successful cultivators of which he offered money prizes. During October last 1500 bulbs were given away, each applicant receiving three—one each of red, white, and blue varieties. Saturday, March 11th, was fixed for the exhibition, when the Hyacinths were staged in the lecture room of the Warrington Museum. There were four classes provided—namely, two bulbs in pots, two in glasses, one in pot, and one in glass: by this arrangement each recipient had two chances to obtain an award. The prizes in each of the two former classes were seven in number, and ranged in value from 12s. to 1s. In each of the other classes there were six prizes awarded, these ranging from 6s. to 1s. in value. Great interest was taken in the proceedings, as was evidenced by the large numbers of both amateur and professional gardeners who visited the show, admission to which was free. The exhibits also were a marked improvement on previous years, as no doubt the townsfolk have become better acquainted with the details essential to successful Hyacinth culture. There is no doubt that the results are pleasing both to the grower and to the donor who in various ways takes an active interest in promoting and fostering the love of horticulture among the masses, and his example might advantageously be followed by many people.—P. W.

— GARDENING APPOINTMENTS.—Mr. G. Humpbry, for the past five years head gardener at East Hill House, Ashford, Kent, has been appointed in a similar capacity to T. G. Peckbam, Esq., Hall Place, Harbledown, Canterbury. Mr. John Macdonald, for the past four years gardener to Lieutenant-Colonel Courtenay-Bruce, Brook House, Fleet, Hants, has been appointed head gardener to Evelyn Heseltine, Esq., The Goldings, Great Warley, Essex. Mr. J. Garthwaite, for the past two years foreman with Mr. Smith at Eden Hall Gardens, Langwathby, Cumberland, has been appointed gardener to Captain Harcourt Wood, Caerberris Hall, Builth, Breconshire.

PERENNIAL BORDER FLOWERS.

ALLIUMS.

BUT for their odour the Alliums would be grown in far more flower gardens than at present. Onions are useful in their place, but people object to having their somewhat obtrusive odour among the border flowers. Yet this fault is not so pronounced in some of the Allium species that it cannot be overlooked, and others are so effective that they can ill be spared. The Alliums are bulbous plants belonging to that natural order the Liliaceæ, which has given us some of our most beautiful garden flowers. Nearly all are of easy culture in any good soil. Of the large number of perennial hardy species, we can at present only give a selection with a brief description of each.

A. acuminatum, a N.W. American species, is a little tender in cold districts. It has deep rose flowers, and grows from 6 to 12 inches high. *A. azureum*, which comes from Siberia, is a fine species with dark blue flowers in a globular head on stems from 12 to 24 inches high. It is not so easily kept as some. *A. cœruleum*, also with blue flowers in dense heads, is a native of Russia, but is not quite so easily grown as the foregoing. It grows 8 or 10 inches high. *A. Karataviense*, which has white flowers in dense heads, is principally grown for its broad, glaucous leaves. It comes from Turkestan, and grows about 8 inches high. *A. Macnabianum* has deep magenta flowers in good sized umbels on stems about 1 foot high. It comes from N. America, and is a fine species.

The old Moly—*A. Moly*—is a fine plant when grown in a mass, and but for its cheapness and its strong Onion odour would be grown in the most select gardens. It came from the South of Europe about 300 years ago. The flowers, which come in May and June, are bright yellow, and the plant is a foot or more in height. *A. neapolitanum* is one of the best of the white-flowered species. It is scarcely so hardy as some, but is valued because of its white flowers and the less pronounced smell it emits. *A. paradoxum* is a pretty little species with drooping white flowers. It comes from Siberia, and grows about a foot high. *A. pedemontanum*, which comes from Piedmont, is pretty, having clusters of large bell-shaped flowers. It needs a warm place in the border.

A. roseum grows quickly and soon forms a clump from which emerge its stems bearing umbels of lilac-rose blooms. It grows from 1 to 1½ foot high. *A. sphaerocephalum* is a species with closely packed flowers in a ball. The blooms are purple, and as this plant grows from 1½ to 2½ feet high, it has its value among other border flowers. *A. triquetrum* is another pretty species from South Europe with drooping flowers of pure white, and triangular stems and leaves. Some of the Alliums produce little bulbils which drop to the ground and form young plants, but almost all increase rapidly at the root by the formation of new bulbs. Seeds are also produced in this country by the majority of the hardy species.

ALSTRÖMERIAS.

Baron Alströmer, the friend of Linnæus, has been kept in remembrance by his name being attached to a genus of plants noted for their beauty and value in the garden or as cut blooms. Of the large number of species only a few are amenable to cultivation in British gardens. Even these cannot all be depended upon to survive our winters in every garden. One of the hardiest, and at the same time most valuable, is *A. aurantiaca*, a handsome plant 3 to 4 feet high, from Chili. The flowers are orange, and streaked in the upper petals with red. A pretty variety of this, named *A. a. aurea* or *lutea*, is lighter in colour and very bright in the garden or as a cut flower.

Perhaps the finest all-round species, because of its variety of colouring, is *A. chilensis*, which is only a trifle less hardy than the preceding. It is not quite so tall, and has flowers which range from red and deep orange to a pleasing rosy white. *A. peregrina*, which grows about a foot high, is a lovely species, with white or pale yellow flowers striped with rose, and each segment marked with a yellow spot. It is unfortunate that this species is rather tender, while its white variety *A. p. alba*, known as the "Lily of the Incas," is even more delicate. Its beauty entitles it to the shelter of a greenhouse.

A hardy species, not so pretty, perhaps, but desirable as well, is *A. psittacina*, which has flowers of crimson, green, and purple. It comes from Mexico, and has been grown to as much as 6 feet high; it is often seen about 4 feet. There are also a lovely variety or species named *Diazi*, and one named *A. revoluta*, both of which can be recommended for those who have warm and sheltered gardens. Alströmerias ought to be deeply planted in a border of light but rich and well manured soil. They dislike excessive drought, and should be watered freely in dry weather if the drainage is good. The less they are disturbed the better. In cold soils and districts they ought to have a slight covering in winter. They may be raised from seeds, or by division of the clumps of roots in autumn or spring.

In some gardens Alströmerias succumb in a puzzling way, even after having been established for years. The writer finds old lime rubbish beneficial, although not mentioned in standard gardening books.—S. ARNOTT.

(To be continued.)

WINTER GREENS.

THE term "Winter Greens" is one that is used to include comprehensively the varieties of the Brassica family, cultivated to furnish a supply of green and succulent vegetables, chiefly from autumn until spring. When referring, either in speaking or writing, to hardy winter green vegetables, it is more convenient to speak of them collectively by the above term than to name each separately, unless for special reasons attention is directed to one variety. In these notes brief reference will be made separately to each vegetable included in the term Winter Greens.

BRUSSELS SPROUTS.

Seeds of one of the leading varieties of this esteemed and delicious vegetable should be sown at once on a piece of good ground in a warm position. Good varieties are Matchless, Aigburth, Wroxton, and Scrymger's Giant. The best method of sowing is to scatter the seeds broadcast and thinly on a well-prepared bed, and cover with a thin layer of soil, burying the seeds a quarter of an inch. Just as germination commences, if not before, protection must be given against the attack of birds, but after the seedlings have advanced to the rough leaf they will be safe. If crowded thin them well, and when three or four leaves have formed great benefit will be derived by the plants if they are still further thinned, and the best transplanted a few inches asunder to strengthen previous to the final planting, which should be to firm rich ground early in June. Plant in rows 2½ feet apart, disposing the plants 18 inches asunder.

CABBAGE.

For the autumn supply seeds should be sown now. Sowing the seeds broadcast is the best plan, and if it is scattered thinly there will be no necessity to transplant them, but lift and plant finally on well manured ground. The varieties mostly in favour for spring sowing are Sutton's Imperial, Wheeler's Imperial, Heartwell Marrow, and London Market.

CAULIFLOWERS.

A supply of autumn Cauliflowers is indispensable, and they may be had in abundance from seeds sown at the present time. Sow thinly on the surface of rich soil, and transplant to permanent positions when they are large enough to lift with balls of earth attached to abundance of fibrous roots. Plenty of manure should be dug into the ground for Cauliflowers, as large plants are needed for producing good heads. Veitch's Autumn Giant is the best and largest variety, and on good ground it may be planted in rows 2½ feet apart, the plants 16 to 18 inches distance in the rows. Walcheren will come in early, while still earlier varieties will precede it.

BROCCOLI.

Winter and spring Broccoli rank as very important crops, and good breadths of the best successional varieties ought most certainly to be grown. Sow the seeds in small square beds as evenly as possible, so as not to unduly crowd the plants during the early stages of growth. They are frequently planted direct from the seed bed, hence the importance of sowing thinly: but a better system is that of pricking out the small plants to strengthen and form good tufts of feeding roots. Good but firm ground is necessary for Broccoli. It is frequently planted where it is necessary to form holes with a crowbar before the plants can be inserted. There is a special advantage in this for the late varieties, as it prevents the plants making a luxuriant growth, which suffers from the effects of a severe winter.

The first varieties to form close compact heads of the purest white colour and excellent quality are Michaelmas White and Veitch's Self-protecting. These are followed by Snow's Winter White, White and Early Purple Sprouting, Leamington, Cattell's Eclipse, and Late Queen. Plant in rows not less than 2 feet apart.

SAVOY CABBAGE.

This excellent winter vegetable is a most useful crop. Good firm compact hearts are formed, which in the winter are highly appreciated. April is early enough to sow seed, which, like the rest of the Brassica family, requires to be sown thinly. It is an advantage to prick out the seedlings to strengthen. Plant out on rich, deeply dug soil, and apportion the distance between the rows and plants according to the variety. The small sorts only require to be 12 inches apart, while the largest may be 24 inches distance between the rows. The Drumhead Savoy is the largest variety, and Gilbert's Universal the smallest.

BORECOLE OR KALE.

The Kales are splendid winter vegetables, and when well grown are quite ornamental in the garden. Extra Curled Scotch, Green and Purple Arctic Curled, Cottagers Dwarf Curled, and Tall Curled are all excellent, and will provide a succession. Variegated Kale is suitable for garnishing, as there are several distinct colours in one leaf, making it highly ornamental. Seed of any variety may be sown now broadcast or in drills, afterwards transplanting. The final planting should be in rich ground in rows 2 feet apart before the plants grow too large and tall.

In dry weather waterings with liquid manure will benefit all the members of the Brassica family. Keep the ground free from weeds and the surface stirred. Drawing earth to the stems helps to steady the plants.—E. D. S.



PRUNING AND MANURING ROSES.

THE season of planting is practically over, and pruning now demands attention. Recently planted bushes may be pruned at once. They will not be very rapid in commencing growth, and it is best when they do begin that the wood formed should be permanent. I usually shorten the branches to within four or five eyes from the bottom of each. Plants put in last year or in former seasons should be pruned according to their habit. Shy-growing varieties must never be hard pruned, as there is a possibility of crippling them; but robust growers are benefited by a rather severe pruning. Early pruning is a great mistake, as it induces the lower buds to start into growth prematurely, and they frequently suffer for it in being overtaken by frost. Plants which have formed a number of small growths and a few very strong long ones should have the small ones closely cut in, and the strong shoots relied on for a supply of bloom. About 6 inches of growth at most is sufficient. What I have noted might be described as the short-spur system of pruning, but it is not the only mode of dealing successfully with Roses.

PRUNING DWARF ROSES.

When dwarf bushes form growths in the autumn from 5 to 8 feet in length it seems a pity to cut them all off at pruning time in the spring, and where there are many plants grown I would strongly advise that a number of these growths be left uncut and be pegged down. They will not, if very strong, bend to touch the ground, as some may think of trying to root them; but this is not the object, the principle being to bend the shoots and peg them about 1 foot or so from the ground, allowing them to remain full length, and every bud along the stem will soon send up a shoot, and these pegged-down stems will bloom very profusely. For profuse blooming no plan will equal this, and it is rather surprising that pegging is not oftener practised. Anyone wishing to possess a mass of Roses, growing and blossoming in semi-wild profusion, could not do better than peg down the shoots over some beds.

To secure very early Rose blooms there is no better plan than not to prune. In many cases now the shoots on unpruned branches of last year will be a few inches in length, especially near the top; but if these shoots were cut back in pruning all the early growths would be gone, and it would be some time before the lower buds would be so far advanced in growth. For this reason I always allow a few of the earliest bushes to remain unpruned, and they supply me with blooms some weeks in advance of the pruned ones; but as a matter of course the very early ones are not so fine as the late ones, and would never do for exhibition. The pegged-down shoots generally bloom earlier than those cut back, and for that reason this mode of culture is not recommended where exhibition blooms are required.

THE USE OF MANURE.

Plants growing in well-prepared quarters do not require the roots disturbed annually by digging in large quantities of manure amongst them, but judiciously applied top-dressings are of the utmost advantage. Bone manure is applied by taking a little of the surface soil from around the stem, and shaking a handful or two over the roots, and then return the soil. The finest Rose growths and blooms I ever produced were secured in this way. Many persons think their Roses will degenerate if the whole of the surface near them is not deeply forked or dug, and much natural manure added every spring, but nothing is gained by disturbing the roots very much. Roses properly planted by the beginning of March, rightly pruned and top-dressed are sure to give their owners satisfaction from the beginning to the end of the flowering season; and after cultivation will be conducted with little or no expense.

TREATMENT OF TEA ROSES.

These remarks apply to an extensive collection of Hybrid Perpetuals grown exclusively to supply a large number of blooms, but the treatment of Tea Roses against walls, and grown in various ways both in the open and under glass, does not differ much from the above as regards soil and top-dressings. Pruning is done at about the same time, but not so extensively, as my Tea Roses are never much pruned, thinning out the small useless shoots to give more space to the strong ones being the main object in cutting. Very strong shoots formed last year and thoroughly ripened in the autumn will produce much finer blooms than small or intermediate growths, although these generally produce the greatest number of buds. The first blooms of the season on Tea Roses are not as a rule so fine as those which follow, and these will have the full benefit of any top-dressings given to the plants now.—ROSARIAN.

SINGLE ROSES.

THE usual monthly dinner and *conversazione* of the Horticultural Club took place on Tuesday, 14th inst., at the Hotel Windsor. The chair was occupied by Mr. R. Gifton Salmond. The subject for discussion was the "Planting and Pruning of Single Roses," and was opened by Mr. Geo. Paul, V.M.H., who said that a different system must be adopted in their planting from that which was pursued in the case of Hybrid Perpetuals, Teas, and Hybrid Teas. There were three ways in which he said they might be advantageously used—trained horizontally, so as to form a fence or hedge, and for this purpose he advocated hurdles (on which the Roses might be trained), supported by five-barred iron fences; as single specimens on lawns, supported by a Larch pole; or as single plants in shrubberies, amongst other flowering shrubs.

With regard to planting, it must be remembered that as they are to remain permanently they should have more space given to them than the ordinary dwarf H.P. or Teas, and liberal provision should be made for their future welfare. A hole about 3 feet in diameter must be made, and filled with good Rose compost. With regard to pruning, it was necessary to bear in mind that they should be treated very differently from the Hybrid Perpetuals and Teas, only requiring the three-year-old wood to be cut away, the two-year-old wood to be laid in, and one-year-old shoots very slightly shortened.

An interesting discussion followed the paper, in which all present joined, and a cordial vote of thanks was awarded to Mr. Paul for his most interesting paper.

NEW SEEDLING PEDIGREE ROSES.

IN looking over the thousands of new seedling pedigree Roses at Messrs. Alex. Dickson & Sons, Royal Nurseries, Newtownards, Co. Down, I was more than pleased at the great care and attention displayed by this firm in so important a work, with a view to giving to the world other new varieties equally good or even better than those that have taken such high rank in the past few years. It is somewhat strange that while so many lovely light varieties have emanated from this source, the dark forms have been almost nil; but I have little hesitation in saying that ere long we shall see some important step made in the latter class if one must judge by the appearance of several finely developed flowers which were noted.

I could not help thinking that here at all events, for many years to come, we can look with safety for varieties of the very highest quality to make their appearance. The firm's new set, which will be distributed during the coming May, comprises varieties of the highest merit only. Many varieties were carefully criticised, some of which I will refer to in a later issue, but the following were so charming at the time of my visit as to merit their inclusion into any garden where cut flowers and decorative work form a leading item.

Beryl.—A lovely Tea of robust growth and free branching habit, which flowers in great abundance throughout the entire season. The half-open buds, long, and of perfect shape, are highly perfumed, the colour being the richest of golden yellow—in fact, shades deeper than the popular W. A. Richardson, on which it is a great advance.

Meta.—This is at once a superb and novel variety of excellent habit and growth. Here again the half-expanded buds are most beautiful; but although several shades of colour were noted on the plants, the predominating one seemed to be of a crushed Strawberry, with saffron suffusion. Fragrance is another special feature in this charming Tea variety. The above are handsome for buttonhole work.

Daisy.—A very distinct Hybrid Tea of moderate growth is this. The blooms are large, full, and perfectly formed; of a rosy pink colour suffused with silvery pink, and very fragrant. It ought to be very serviceable for exhibition purposes.

Killarney.—Here we have another charming variety of robust growth, and a veritable gem for garden work and cut flowers, the blooms being produced in handsome bunches. The trusses are large, the buds being long and pointed; colour flesh shaded white with pink suffusion. It is a distinct Rose of great merit, and must attract considerable attention.

Ards Rover.—In this fine variety we have a distinct and valuable addition to our climbing and pillar Roses. The foliage is large and handsome; flowers produced in bunches, of a Général Jacqueminot colour, with sweet-scented flowers as perfectly formed. It is a true H.P. climber, and a very welcome addition in the matter of colour.—A VISITOR.

MR. ROBERT SYDENHAM'S NEW PREMISES. — Mr. Sydenham has found it necessary to erect new premises to meet the requirements of his expanding trade. The new structure is built of best Staffordshire bricks with freestone dressings. It is a two-storied building exclusive of the basement and underground stores. The various store, packing rooms and offices are fitted with every modern appliance, including the electric light and a commodious fireproof room containing a large array of business books. It was an interesting sight to watch the staff of employees sorting, packing, and making up seed orders in the various departments with precision and care, a large item being the collection of Sweet Peas, which form a speciality in the establishment.—VISITOR.

CAMELLIAS.

IN reference to Mr. W. Paul's interesting paper on these plants, on page 197, may I be allowed to mention that Camellias are much hardier than most people imagine; and with half the care expended on their culture in pots, they would do well outside in the majority of gardens south of the Trent? There are many plants growing outside here in rude health, the majority of which have been in their present positions from twelve to twenty years. In most seasons they flower well, and when a frost does cut the expanded flowers (as sometimes happens in April and May) they soon recover their beauty, because there are plenty of unexpanded buds which afterwards open. Even in the severe winter of 1895, when we had the thermometer on the grass 8° below zero, the Camellia plants were not injured. There are several varieties, including *corallina*, *elegans*, *alba plena*, and *imbricata*. *C. corallina* opened its first flowers on Wednesday, March 15th, and is generally the earliest.

I find they succeed best in a moist soil, and dry banks, which many might consider favourable on account of the warmth and shelter, are not suitable; while in soils containing much lime provision should be made to prevent absorption from the surrounding soil. In such circumstances beds of peat or vegetable mould will be necessary. The soil here is on the middle lias formation, and many plants which object to lime thrive in our stiff clay without any admixture, but require care—until they get established in the clay—in regard to watering and mulching, because the dry air of summer is liable to penetrate the clay too freely for the first year or two after it has been moved. In addition, we have the benefit of shelter from large timber trees which shield the smaller plants from the full force of cold winds.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

WHEN Messrs William Paul & Son of Waltham Cross, send up to the Drill Hall one of their really superb collections of Camellias, knowing ones toss their heads as with disdain and say, "They are now out of fashion!" I do not care a rap for fashion, for if there is one thing in horticulture that is detestable it is fashion. But fashion apart, if what is thus said be correct, so much the worse for gardening. But whether in or out of fashion, is the Camellia really a less kindly regarded greenhouse shrub now in gardens generally than it has been in the past? If there be any lovers of gardening who would deride the plant, an occasional dose of one of Mr. Paul's beautiful exhibits or a visit to Waltham Cross, should soon work a cure. What intensely green, lustrous leafage; what massive, pure, and withal beautiful flowers; what enduring plants; how easily grown; how readily they bloom in the winter; and what superb objects are fine specimens when in full bloom and in rude health. How is it possible, then, not to treat with contempt the assertion that Camellias are "out of fashion?"—A. D.

ROYAL HORTICULTURAL SOCIETY.

MARCH 14TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Dr. Müller, Mr. E. F. in Thurm, and Rev. G. Henslow, Hon. Sec.

Dahlia disease.—Some roots were received from Messrs. A. Lister and Son, Rothsay, with the following communication:—"First, we started our roots in the manner we have done for years with the best results—namely, on a hot bench, taking cuttings within three weeks of their insertion, and gradually lessening the heat as time went on. Secondly, the first batch this season was somewhat soft, and all failed; not, however, by damping off, but from the effects of the disease. Thirdly, last season we had magnificent strikes, but near the close of the season, the "spot"—as on the specimen sent—made its appearance, but was very limited. Fourthly, the bottom heat was maintained at about 70°, while the top was about 15° less. Fifthly, Can the Tomato disease have become incorporated with the soil, as Tomatoes had been grown there; and has this any relation to the disease or cause of the trouble? Sixthly, all the roots were placed in comparatively new soil, although some of the old may have been mixed with it. Seventhly, the house is well aired, and the cuttings were firm when taken off. As to remedies, we have applied sulphur with satisfactory results; so far as it killed the fungus at the root and allowed fresh clean growth to be made, but it had no apparent effect on the cuttings. They went off by the score. We have hitherto been most successful in Dahlia cultivation, and have had misfortunes, too, but this disease completely baffles us. The result is the same, both with hard-grown forced exhibition roots, and those grown without forcing."

The following valuable report on the preceding was received from Dr. W. G. Smith, Yorkshire College, Leeds, to whom a vote of thanks was unanimously accorded.

"The Dahlia cuttings when received showed various stages of blackened discolouration, where they had been in contact with the soil, and also on the older leaves, especially where they joined the stem. Where the blackening was worst the tissues were filled with bacteria, and fungus filaments were present. After a few days in a moist chamber the cuttings became black and rotten, the bacteria were more abundant, and the fungus bore colourless spores of two kinds. Your correspondent suggests infection from Tomato disease, previously present in the same house. We find that the two forms of fungus conidia (and only two are present) occurring on this Dahlia material are almost (but not exactly) identical in form with those figured by Mr. Massee ("Gardeners' Chronicle," June 8th, 1895) in connection with the Tomato 'sleepy

disease.' Whether this is a coincidence or a connection, it is as yet too early to say. There is, however, little doubt that this Dahlia disease affects the cuttings in the same way as the above Tomato disease. It has its origin in the soil.

"Remedies.—Your correspondent has tried sulphur in the soil with some good effect. No fungicide, however, will be so beneficial as—

"1, Fresh clean soil.

"2, Ventilation, as far as it can be given.

"3, To water the freshly struck cuttings as little as possible till they form roots.

"4, To use boxes or pans which have been thoroughly disinfected, and to have houses and benches washed down with a limewash.

"In addition to these Mr. Massee recommends for the Tomato disease, to mix as much lime in the soil as the plant will stand. How far these measures can be carried out must lie with the discretion of the grower." Dr. Müller suggested sterilising it, by baking the soil.

Hybrid Narcissi.—Some specimens were received from Rev. C. Wolley Dod with the following remarks:—"I send a spontaneous hybrid which has come in one of my flower beds. It is presumably *N. pseudo-Narcissus* var. *minimus* × *N. cyclamineus*. I also enclose the parents. I consider *N. cyclamineus* one of the best marked species of the genus. It is the only one which has the perianth almost sessile on the fruit. Mr. G. Maw once suggested to me that it might be produced by *N. minimus* × *N. triandrus*, but he overlooked this character—the tube of *N. triandrus* being very long. In the hybrid sent the tube is intermediate between the parents. The trunk of the perianth follows neither parent, being cylindrical, while that of *N. p. minimus* tends to be funnel-shaped, and that of *N. cyclamineus* is always ventricose and contracted towards the mouth. *N. cyclamineus* is a profuse pollen bearer and seed bearer, but the bulb, with me at least, is short lived, and requires constant renewal from seed. I have also observed in another bed a hybrid, *N. cyclamineus* × *N. pseudo-Narcissus*, of some larger variety. The developed tube and glaucous broad leaf belong with certainty to *pseudo-Narcissus*, though the perianth is completely reflexed, as in *cyclamineus*."

RIPLEY CASTLE.

THIS ancient home of the Ingilbys is prettily situated on the edge of the Nidd Valley, close to the model village of Ripley, and three and a half miles north of Harrogate, on the main road from Leeds to Ripon. The undulating park is extensive, and has been judiciously planted with timber many years since, which now contributes largely to the picturesque effect of the country on the west side of the Castle. There is a lake of 35 acres, into which flows a stream at one end, the water afterwards finding its way into the river Nidd. The whole piece has been successfully dealt with to secure a natural appearance, with nicely broken margins and some well clothed islands, and is far prettier than many lakes in similar positions. One is much surprised to hear that it was the work of a Lincolnshire farmer—Mr. Mark Favril—many years ago; he came and dammed up the stream until it flooded the ground to the desired extent, and then took the necessary steps to make it a permanent feature.

The Castle is a substantial but plain building, and is approached from the village by a gateway and tower. The latter dates from the early part of the fifteenth century, and appears to be the oldest portion of the building now remaining; but ancestors of the present Sir Henry Ingilby resided here a century before that date. Among the many old family records and curios preserved in the Castle, mention may here be made of one in the form of a penance inflicted upon Sir William Ingilby for renouncing popery. It consisted of a large amount of walking every night, but was only to continue to the end of the world! A pig of lead stamped with Julius Caesar's inscription and date 87 may also be seen, with a leathern jacket which belonged to Oliver Cromwell, who slept here after the famous battle of Marston Moor, in 1644. The grounds close to the Castle contain no flowers, and thereby are more in character with the building; but the well kept grass lawns and walks are worthy of note, and so is the Ivy on the Castle walls. A fine specimen of *Salisburia adiantifolia* occupies a large space on a southern aspect, and is trained like a horizontal Pear tree, but does not fruit.

A large oblong enclosure, a short distance from the Castle, surrounded by a fine range of hothouses on the north side, and by walls which are hidden by shrubs and creepers on the other sides, contains all the flower beds and herbaceous borders, with enough grass and shrubs to tone down the colours and form a very pleasant picture. Both Sir Henry and Lady Ingilby take great interest in the gardens, and the demand for flowers, fruits, and vegetables is large and continuous. At the end of August a large collection of Eckford's Sweet Peas was in full flower. The seeds are sown in pots early in March, and planted a month later; each potful forms a column of plants 8 to 10 feet high, and continual gathering of the faded blooms induces a succession throughout the season. A border of *Salvia patens* in full flower with a tall variegated Grass dotted in at intervals was very effective; another close by contained finely coloured examples of *Lavatera arborea variegata* mixed with *Ricinus Gibsoni* and other fine-foliage plants.

Annuals are grown extensively and make a great feature in the summer. *Malope grandiflora*, *Lavatera trimestris*, *Schizanthus retusus*, Sweet Sultan in three colours, *Coreopsis Drummondii*, *Gypsophila elegans*, *G. e. rosea*, *Bartonia aurea*, *Cosmos bipinnata*, and Sweet Scabious were noted as the

most effective. Near these a collection of herbaceous plants was growing and flowering well, the border extending to a length of 450 feet. Some of the best in flower at that time were *Dicentra eximia*, *Phygelius capensis*, *Aster acris*, *A. ericoides*, *Hyacinthus candicans*, *Lysimachia clethroides*, *Montbretia Pottsi*, *Verbena venosa*, *Scabiosa caucasica*, *Hemerocallis fulva*, *H. flava*, *Sidalcea candida*, *Bocconia cordata*, *Alströmeria aurantiaca*, *Delphiniums* in variety, and many others. These were backed by the Sweet Peas previously mentioned, and a fine collection of Hollyhocks growing from 8 to 10 feet high. These were the picture of health, and full of flowers; they are raised by sowing seed annually in May.

At the back of this border is the principal range of glass, 450 feet in length; it is divided into eleven compartments, and terminates at each end in a square built stone structure. One of these is fitted as a garden room for visitors to rest in; while the other does duty as a fruit room. Entering from the former, the first house contained a good collection of Zonal *Pelargoniums* in pots. At the back of the stage a hedge of *Plumbago capensis*, 8 feet high, formed a remarkably pretty picture, as it showed to advantage behind the bright coloured *Pelargonium* flowers; on the back

sweetly scented, an old plant worthy of more extensive cultivation; and *Begonia corallina*. The stove contained a fine collection of *Eucharis* in first-rate health, and a plant of *Aristolochia elegans* on the back wall was flowering well, and has not the disagreeable scent of the larger species. A large collection of useful decorative plants was growing here. The central division is devoted to Palms, with the exception of a *Bougainvillea glabra* above, which gives a welcome touch of colour among all the greenery. In the seventh division, among a great variety of flowering plants, *Crinum Moorei* was flowering well; *Petunia Mrs. F. Sander* (which is a very pretty shade of pink), *Swainsonia galegifolia*, *Francoa ramosa*, *Solanum jasminoides*, *Campanula pyramidalis*, and *Streptosolen Jamesoni*, were in splendid condition; a very large plant of *Vesuvius Pelargonium* occupied part of the back wall.

The late vinery contained a fine crop of *Gros Colman*, *Lady Downe's*, and *Alicante*, with *Smilax* and *Adiantums* in abundance underneath, and a very healthy looking plant of the new Conifer from Africa—*Widdringtonia Whytei*—which seemed quite contented under the shade of the Vines, the Grapes were finishing well, good bunches, large berries,

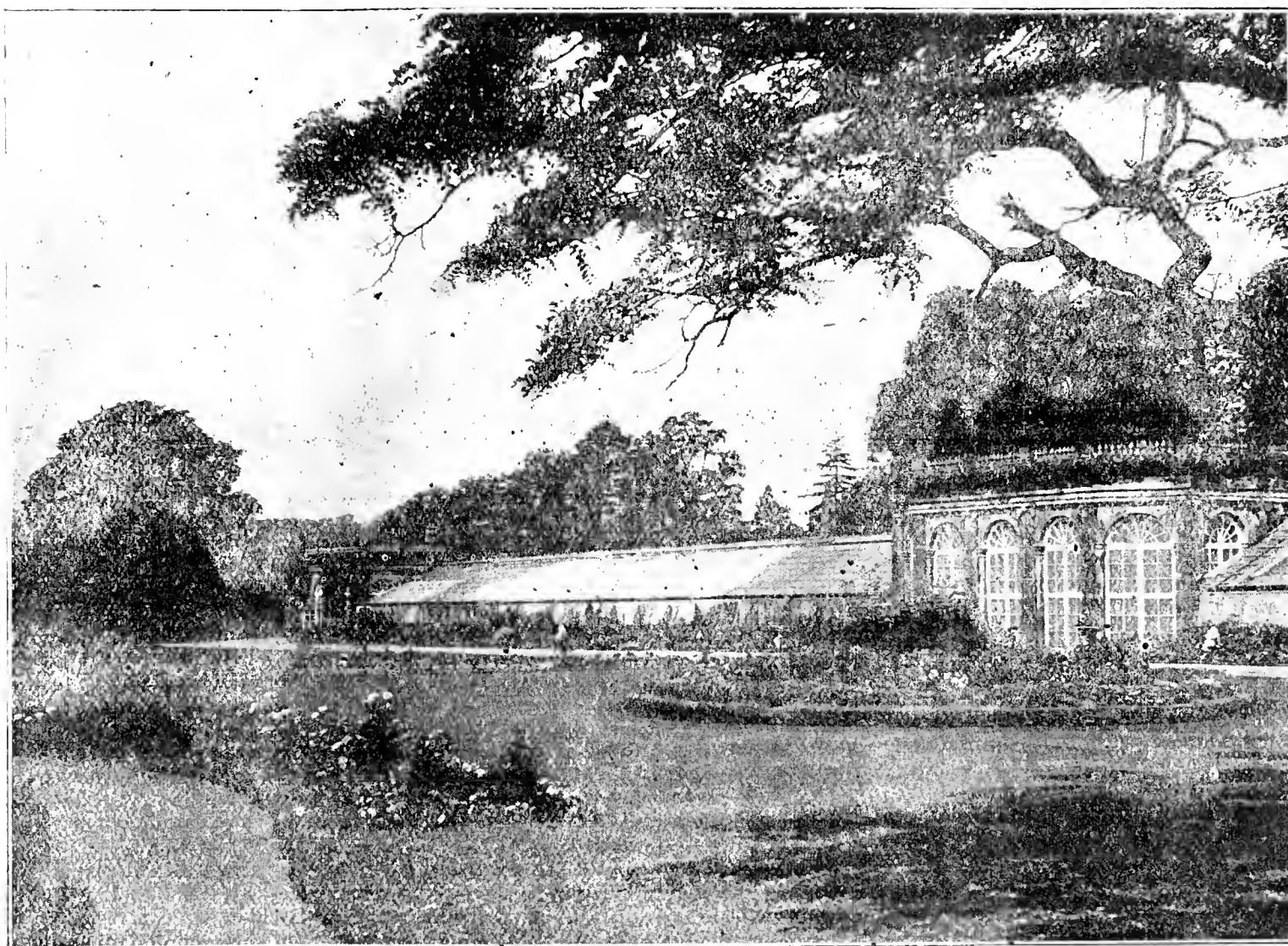


FIG. 59.—IN RIPLEY CASTLE GARDENS.

wall a fine plant of double scarlet *Pelargonium E. V. Raspail* added largely to the effect when seen from the end; a plant of *Heliotrope* known to be over fifty years old was growing on the back wall also. The next division is devoted to Vines, which were carrying a heavy crop of well finished fruit. *Lady Downe's*, *Mrs. Pince*, *Barbarossa*, *White Nice*, *Black Hamburgh*, and *Trentham Black* were all doing well together. The last variety is not often met with, and appears very similar to *Lady Downe's*. Owing to the large demand for plants, Mr. Tunnington is obliged to grow various kinds under the Vines, and succeeds remarkably well, but it is impossible to do full justice to all when grown together, and much labour and anxiety is sure to follow in regard to keeping away insects. The next division was an early vinery, the crop of fruit having reached 220 bunches, which is certainly not a bad one for a house 40 feet long, but these had all been used before my visit.

We next came to the Pine stove, where some famous Pines were grown in years gone by, of which the variety *Ripley Queen* perpetuates the memory; but for various reasons their culture has been discontinued, and the house contained a splendid crop of Tomatoes, the sorts being *Sutton's Ruby*, *Conference*, and *Hackwood Park*; the latter variety is preferred by Mr. Tunnington for winter fruiting. Every corner under glass is made to grow something useful, and in this house were nice plants of a new *Abutilon* with white variegated leaves, very pretty and distinct; *Acalypha Hamiltoniana*, the leaves green and yellow, and curiously jagged at the edges; *Celsia arcturus* flowering well and very pretty; *Rogiera gratissima*,

and perfect colour. Peaches are grown in large numbers in the next two divisions, the latest of which contained some good fruits of *Sea Eagle* and *Prince of Wales* Peaches, and *Pineapple Nectarine*. A Fig tree on the back wall was fruiting well, planted in a border 1 foot wide, and 18 inches deep; a very limited larder, but probably its roots may have found a crack somewhere leading to fresh supplies. The last division is chiefly occupied by *Maréchal Niel* Roses. These were full of strong healthy young wood, trained in long rods near the glass, which is the best way of getting large and highly coloured flowers. The healthiest *Primula floribunda* that I have ever seen, were growing in a very shady corridor close by, and consisted of dozens of plants in rude health, which must form a charming sight when in flower.

Time and space will not allow of more than a few words on the remaining plant houses. Although these are not in accordance with modern ideas structurally, they yet contained grand *Poinsettias*, and many other useful winter flowering plants. The kitchen garden, too, deserves more than a passing notice, part of it having been under cultivation for hundreds of years, but with skilful management and close attention good crops of vegetables are still grown, although this is by no means a favourable locality as regards climatic conditions. In one portion of the vegetable quarters were many fine *Chrysanthemums*, from which it is apparent that Mr. Tunnington inherits some of his father's ability in their culture, as the whole of them were in the best of health, and clothed with foliage to the rims of the pots.—W. H. DIVERS.



THE KINGSTON CHRYSANTHEMUM SOCIETY.

IN spite of some adverse times there seems to be a good deal of life in this old Society yet. Although not the oldest in the kingdom, yet it is one of the earliest formed, and is now in its twenty-third year of existence. At the annual meeting of its members, held on the 17th inst., Mr. W. Drewett presiding, the balance-sheet—though because of the severe illness of the Hon. Secretary, Mr. W. D. Elsam, was not complete—showed that during the past year previous liabilities, to the extent of some £30, had been paid, and it was hoped when all assets were secured that only a very trivial balance against the Treasurer would remain. Had the second day of the last November Show been propitious, rather than very wild and wet, no doubt a balance on the other side would have resulted. The meeting regretted to learn of the resignation of the President, Mr. G. C. Sherrard, but hoped that the office might be filled by a gentleman of position in the county.

It was agreed to hold the Show for the present year on November 8th and 9th, and thus not conflict with the first day of the National Society's Show at the Westminster Aquarium—viz., November 17th. It was also agreed to dispense with any challenge vase, and to have a premier class for thirty-six Japanese flowers in place thereof, valuable cash prizes only being offered. The old members of the Committee, with few exceptions, were re-elected, the additions being Messrs. Gibson, Kingston Hill, and Telsell, Sunbiton, gardeners, and Messrs. Hill and Mussell, amateurs. An offer from the Hon. Secretary to organise concerts in connection with the next Show was cordially accepted.

CHRYSANTHEMUMS AND THEIR CULTURE.

MR. G. STILES, gardener to Miss Fripp of the Grove, Teignmouth, and one of the leading growers of Chrysanthemums in the West of England, lectured on the culture and judging of the flower to the members of the Devon and Exeter Gardeners' Association recently. He pointed out that cuttings for exhibition blooms should be rooted in December if possible, and not later than February, and cuttings ought to be selected from those which come up from the soil. Cuttings taken from the wood were prone to throwing flower buds. Those selected for rooting should be short-jointed, medium-sized, and healthy. The compost ought to consist of loam, leaf mould, and sand in equal parts. The best way to root cuttings was to put them in shallow boxes, about 2 inches deep, and place them in a frame with a gentle bottom heat of about 55° to 60°, keeping them as near the glass as possible, and be sprinkled over with warm water, care being taken not to let the soil get too wet. Just a little air should be given every day, and they ought to be slightly shaded from the hot sun on bright days for a short time. In about a fortnight or three weeks most of the cuttings will be rooted, and more air must be given them by taking off the lights gradually every day until on fine days they might be removed. By doing this the plants would be sturdy and strong, one of the main points in Chrysanthemum culture.

After potting they should be placed in a gentle heat in a frame or house. As soon as the roots begin to catch hold of the new soil they should be removed to a cold frame or greenhouse, given plenty of air, but protected from the frost. Care must be taken not to overwater. Plants grow too soft if too much water is used over the foliage, and syringing once a week is quite enough. Their next potting should be in a compost of two parts good loam, one leaf mould, and the other part sand, lime rubble and charcoal, with about half a pound of guano to a wheelbarrowful of this mixture. The plants should be placed in a cold frame till the end of March, when they could be put in the open. About the middle of May the final potting ought to take place, and the compost should consist of good fibrous loam a little over two parts, one part leaf mould, and the remainder lime rubble and good decayed manure, with a sprinkling of charcoal, and about a pound of guano to a wheelbarrowful of the soil. In potting the soil should be made moderately firm, excepting for a few varieties, which require to be potted rather lightly. In their summer quarters the plants should be quite 2 feet apart in the rows, in rows 5 feet asunder.

The first bud, which would show itself about the end of May, must be removed, and the number of shoots should be left that the plants were intended to carry. He seldom practised pinching. He recommended for liquid manure, which he commenced to use about the end of July, fowls' manure and soot. After the 1st of September sulphate of ammonia could be given twice weekly, about 4 ozs. to 5 gallons of water. Dressing of blooms should commence as soon as they are half open, by removing all crooked and deformed florets as

they appeared, so as to let the flower attain to its proper shape as it opened. If any of the flowers showed hard centres, or eyes, in opening, these should be gradually removed, so as to let the inside florets come up full in the centre as the bloom expanded. This applied to the Japanese varieties. The incurved required much more attention. The essayist gave advice as to the treatment of these, and in referring to the judging of the blooms, he called attention to the importance of judges seeing that the trays were of the regulation size. He contended that every exhibitor should be disqualified who did not show his exhibits on the regulation sized tray, and when there was any doubt as to the award, the trays should be placed side by side, and each bloom taken out and compared. Mr. Charley, gardener at Wonford House, occupied the chair—"Devon and Exeter Gazette.")

A TRANSFORMATION.

WHY do we allow our fruit tree branches and stems to remain covered with moss and lichen, swarms of red spider, and scale? is a question I have often asked myself, and could never find a satisfactory reply. As these pests must be detrimental to the welfare of the trees I set about their extirpation. Early in February I procured 6 lbs. of caustic soda, 98 per cent., and 5 lbs. of carbonate of potash, and dissolved the two in 60 gallons of water. When all was thoroughly dissolved I added 4½ lbs. of soft soap. Our fruit tree stems and branches become green in one year if nothing is done to kill the lichens, for which purpose I have generally used soot and lime. On occasions brine has been employed, as it is useful and inexpensive. This season, however, the trees were dressed with the caustic solution, and the stems are now a pleasure to look upon. All the greenness has gone, and there are the dark bright stems. The red spider was destroyed, and the scale on the branches of the Pear trees on the walls are now falling off and leaving small white specks on the bark, showing where they have been sucking the life of the trees. I applied the dressing myself with an Abol syringe, which I found the best for the purpose I have used or seen. The operator can have a fine or coarse spray at will by simply turning a small screw. I spoilt two pairs of leather gloves in applying the solution, which the operation hardened and burned them, and they afterwards cracked. Boots and clothes were also damaged, and it was not pleasant when a light breeze of wind happened to send a little of the spray into the face. The work was tedious, but I have never done anything with which I was better satisfied. It is important that this solution be applied before the buds show signs of expansion.

Two years ago I dressed the trees with the same quantity of caustic soda (I ordered the quality 98 per cent.) and carbonate of potash, but not the soap. When Mr. H. H. Cousin's "Chemistry of the Garden" was notified in the Journal I procured one, and I consider it one of the most valuable little books in the English language, and it must prove to be a boon to every British gardener who would read and digest it thoroughly. It was in reading this primer that I first learned the fact of soft soap being advantageous with the caustic solution. When, as I have said I used the mixture minus the soap the dressing did not pay for the labour, partially perhaps owing to the chemicals being old.

Fruit trees appear to be showing abundance of flower buds this year, but we may have several checks before the next two months have gone.—GEO. PICKER.

ROYAL METEOROLOGICAL SOCIETY. — The monthly meeting of this Society was held on Wednesday evening, the 15th inst., at the Institution of Civil Engineers, Great George Street, Westminster. Mr. F. C. Bayard, LL.M., President, in the chair. Mr. F. J. Brodie read a paper on "The Prolonged Deficiency of Rain in 1897 and 1898." For several years past there has existed over England, and especially over the central and south-eastern parts of the country, a remarkable tendency in favour of dry weather. The dry weather dealt with in this paper consequently came at a most inopportune time, and its effects, which would in any case have been sufficiently evident, were greatly aggravated by the state of things existing so long previously. Mr. Brodie discussed the rainfall records at eighty stations, distributed over the British Isles, for eighteen months—April, 1897, to September, 1898; these were divided into three periods of six months each. During the period April to September, 1897, the rainfall was in excess of the average over practically the whole of Ireland, the greater part of Scotland, and the north-west and south-west of England and Wales, while in the north of Scotland, and the central and the whole of the eastern part of England there was a deficiency of rain, in some parts amounting to between 60 and 70 per cent. During the period October 1897, to March, 1898, with the exception of the north-west of Scotland and England, the rainfall was below the average all over the British Isles, the deficiency over the midland and south-eastern parts of England being from 50 to 60 per cent. below the average. During the period April to September, 1898, two of the six months were excessively dry, and in the southern parts of England at least two others had a deficiency of rainfall. Taking the period as a whole, the rainfall over the eastern, midland, and southern counties amounted to less than 80 per cent. of the average, and in the south-eastern counties to less than 60 per cent., the smallest proportion of all being 51 per cent. in London. From an examination of the Greenwich rainfall records since 1841 it appears evident that for length and severity combined the recent spell of dry weather was the most remarkable experienced there during that period. A paper on the "Climate of Jersey," by the Rev. H. W. York, M.A., was read by the Secretary.

LONDON GARDENS OVER FIFTY YEARS.

No. 5.

AMONGST the events associated with the Diamond Jubilee of our beloved and honoured Queen was the formation of a committee, composed of members of the Commons Preservation Society, the Kyrle Society, and the Metropolitan Public Gardens Association, by which a letter was addressed to all town and district Councils, also to a number of landowners. The object of this was to induce the setting apart in every locality a plot of ground, to be called the "Queen Victoria" park, garden, playground, or field, as it might be, such open space to be dedicated to the free use of young and old.

Already the appeal is bearing fruit, and, in the vicinity of the densely populated districts of London it is particularly important that still further provision be made of public gardens—a portion devoted to the sports of the young in some cases, but chiefly planted with shrubs or trees, and made bright by flower beds. As such gardens, small and large, multiply, there is no doubt they will tend to promote a love for flowers, and encourage gardening pursuits, especially amongst the class which needs to be drawn from low and mischievous pleasures. Some of the smaller plots about London surprise us by their display through the greater part of the year, but of course they cannot afford room for many shrubs, the beds being kept well filled with plants having attractive foliage or showy flowers. So great is the popularity of some gardens now opened in London suburbs, that the gardeners find it impossible to work satisfactorily during the hours when the public are admitted.

London horticulture is already greatly indebted to the exertions and influence of the Metropolitan Public Gardens Association just mentioned, and next century, we may hope, will evidence grander results still should its income enlarge. At present its funds are inadequate to its opportunities; but the money expended represents only a part of the useful work done by this Society, of which the Earl of Meath was the chief originator in 1882. Previous to that, the Kyrle Society and the National Health Society had been actively engaged in the work of acquiring and laying out various open spaces amid a crowded population, mostly neglected churchyards, where interments had been stopped after 1853. Even then there was a danger lest these should be built over, or converted into yards for business purposes, and an Act of Parliament had to be obtained securing them from desecration. It was felt by Lord Meath and others that a society formed for the special purpose of increasing public gardens throughout London had an ample field before it, and when it reached its semi-jubilee the society could show a good record. Above a hundred gardens and recreation grounds had been laid out, or purchased, by the Association, and by its agency many hundreds of trees had been planted. Amongst the larger enterprises on which it has recently been co-operating with other bodies is the preservation intact of Chelsea Physic Garden and of Alexandra Park, also the acquisition of Golders Green and Dollis Hill, besides a fine space upon the bank of the Thames at Wandsworth.

The Metropolitan Public Gardens Association made no great display at its commencement, beginning upon churchyards, small neglected squares, and other spaces which could be secured by a moderate outlay, then put in order cheaply. Enterprises which look little besides such schemes of the London County Council as the purchase and laying out of Ravenscourt Park for £62,000, and Brockwell Park for £122,000, yet many a space of but an acre or two, perhaps less, made free to all, and planted as a garden, is an oasis in the desert of crowded houses and narrow streets to the sick or aged, and often to the weary toiler also. One difficulty with reference to some churchyards has been that, an opposition being made to the removal of certain tombstones, they could only be partially converted into gardens. Then there are churchyards open to the public, several of good size, which have not had their graves interfered with at all, still they furnish places for a stroll amid shrubs, trees, and some scattered plants of a varied nature. An example familiar to West Londoners is the ground in Bayswater Road belonging to St. George's, which is nearly 6 acres in extent. The smaller ground belonging to the Vestry of that parish, in Mount Street, is very tastefully laid out.

In two or three instances the people living around a London garden are so rough that it is impossible to preserve flowers or shrubs from damage, but generally even the irrepressible cockney urchin understands that he must keep his fingers off the plants. I cannot say how it might be if there were fruit to be got at. There, I admit, is an objection to a proposal of mine, that for the sake of variety some fruit trees should be planted in our metropolitan open spaces. One of the ancient City churches, according to tradition, stood in a grove of Apples, and in our time the Charterhouse Burial Ground had several magnificent wall fruit trees. But the only fruit we are likely to discover about most old churchyards is the Elderberry, this tree being often set formerly as a sacred plant possessed of many virtues.

We have referred to five London churchyards, which might be said to have occupied the position of pioneer gardens, when it was being

impressed upon the public mind that even a small open space could be made a pleasant resort, if not given up to cats, sparrows, and all sorts of refuse. Within the central part of London, the churchyards now open are not chiefly frequented by the poor, but give a rest or refreshment to the busy City clerk and the warehouse worker. Very cheerful some of these plots appear in springtime through the judicious planting of bulbs and tubers. A choice nook is the little garden of Benjamin Street, near Farringdon Road, but a quarter acre, once the ground of St. John's, and after it was closed for burials it fell into the hands of a builder, who covered it with workshops. Happily it was rescued, the space cleared in 1881, and since it has been well kept. During fine summer days, crowded is the so-called "postman's park," the old churchyard of St. Botolph's, Aldersgate, enlarged of late by the acquisition of two other grounds abutting. About the same dimensions are the valuable spaces of St. Olave's, Silver Street, and Allhallows's, London Wall, and that of St. Dunstan's in the East, Idol Lane, which has some old trees in a flourishing condition. Obviously, when such grounds have the flower beds partly shaded by trees, it is only certain plants that will thrive, and sowing annuals is apt to be unprofitable. Amongst other novelties, in some of these gardens is a columbarium or pigeon house, as its occupants furnish amusement to children, but I query whether pigeons ever prove good gardeners.

Occupying the position it does in a much frequented part of the City, St. Paul's Churchyard has daily its thousands of visitors; the extent is about 2 acres, but it is not at all garden. Not a bad spot to take a hasty lunch, with the Cathedral close by to retreat into for a cool contrast in summer. The City is not a place of squares, we go westward or northward to find these; yet some there are of old date, which have now been improved and with other odd scraps of land changed into gardens. During the eighteenth century several of these squares were not even enclosed with posts, and laid in a waste condition; two or three are said to have been small nurseries, supplying seeds and plants to the well populated streets adjacent. Out amongst the suburbs, too, it was not unusual for a nursery, which had occupied acres, to shrink finally into the centre of a square, and then disappear. We have an example in Ebury Square, Piccadilly, which, after sundry vicissitudes, is still kept as a public garden. Close to the old Smithfield Market, in Long Lane, we come upon a clear space of but a rood, and a similar plot near Brooke's Market, Holborn, has been rescued from the builder. Both are now laid out as gardens, with fountains, and are a great boon to a poor neighbourhood. Northampton Square, Clerkenwell, an open ground which was a leafy surprise to the by-passer who came up to it from one of the radiating streets, has been public since 1885, over £1000 being spent in laying out this and Wilmington Square near, once a nursery where Auriculas and Polyanthus attracted North Londoners.

Since the spring of 1888 the Tower Gardens, 2 acres in extent, have been made a free resort, the ground being admirably laid out. Previous to that date the name "garden" would have been a misnomer, for the space was in a very neglected condition. The valuable acquisition by the London County Council of Lincoln's Inn Fields with its 7 acres ended a struggle which had been going on for many years to secure this area for the public benefit. Someone has described the amazement shown by the children of the locality on being allowed to enter the precincts, which they had often looked at through the railings. There are some good trees, and the ground still retains the impress of the style of gardening popular in Georgian times, for the legal gentlemen who managed it formerly did not modernise much.

Going north or east of the City we come upon many churchyards, several rather extensive, which some twenty years ago looked doleful indeed, but are now healthful and pleasant gardens. St. Dunstan's, Stepney, has nearly 7 acres, and was opened in 1887 by the Duchess of Leeds. It displays a variety of trees and shrubs, besides flowers. The churchyard of St. John at Hackney is 6 acres; but only part is garden, the rest grass. All Saints', Poplar, is about half that size. It was opened by Lady Reay in 1893, and is well kept. Of similar extent is St. Anne's, Limehouse, also opened twelve years ago by the Countess of Strafford, and which is greatly appreciated. Almost attaining to the dimensions of a little park is the space called Meath Gardens, of 11 acres, and Victoria Park Cemetery, opened by the Duke of York in 1894. Bethnal Green Gardens, of 6 acres, was only secured to the inhabitants after a long and arduous struggle. Its flowers in summer have thousands of visitors.—J. R. S. C.

ERYTHRONIUMS AND CHIONODOXAS IN POTS.—It would be difficult to say which of the two mentioned plants ought to be held in the highest esteem for pot culture. Both are so admirably adapted to this purpose to be used as front-row plants as to necessitate their being grown by anyone possessing a small house, whilst for larger displays they cannot be overlooked. The grandiflorum type of *Erythronium dens-canis* has fine flowers and foliage. Not only are the flowers quaint and pleasing, but the foliage also is handsome. The shade of blue of the *Chionodoxa* is sufficient claim for its inclusion also.—R. P. R.

GROWING CROTONS.

AMONGST ornamental fine-foliated stove plants the Croton stands in the first rank for the rich colour and gracefulness of its leaves. Most varieties differ so much in habit as to make them well adapted to be grown in great numbers together without looking monotonous. Few plants are more beautiful when well grown than a collection of Crotons when the sun is shining upon them. The large dark red foliage of Baron James de Rothschild, the rich golden bronze of Queen Victoria, and the large golden blotched leaves of Morti, blended with the pale yellow and green foliage of variegatus, and the stiffness of these taken off by the graceful drooping foliage of such varieties as interruptus, interruptus aureus, ligarius, Weismann, Cyrus, Cheloni, aureo-punctatus, Princess of Wales, elegantissimus, Warreni, and many others, is a sight to be remembered by all interested in the cultivation of fine-foliated plants.

To perpetuate a variety of any plant it must be propagated by cuttings, buds, or grafts, as those raised from seed rarely come true. As a proof of this I may mention that I have at present six seedling Crotons, from 4 to 5 inches high, raised from one of the narrow-leaved varieties, and not one resembles the parent plant, and no two of them are alike. They differ much in the colour and shape of their leaves, and also in the habit of their growth. Some have narrow leaves of different shades of colour, while others have broad green leaves with no sign of variegation whatever.

PROPAGATION.

Crotons can be propagated at almost any season by inserting strong cuttings of half-ripened wood in small pots in a soil or composition made of equal parts of loam, leaf mould, and silver sand, and plunged in a gentle bottom heat until they are rooted. During this stage the cuttings should be dewed over the foliage with a fine-rose watering pot every day to keep the leaves fresh, and to prevent red spider attacking them. When the cuttings are sufficiently rooted, which will take from three to six weeks, according to the season, they are shifted into pots a size larger, using the following compost: three parts of good fibrous loam, one of peat, one of leaf mould, and about a third of the whole of sharp river sand, which will keep the compost fresh and porous. The plants are then placed in the stove close to the glass, where they will receive as much light and sunshine as possible. As the plants increase in size they are shifted into larger pots, always using the same compost as that just mentioned.

Great care must be exercised in watering the plants. The soil should never be allowed to become too dry or too wet and sodden, or the roots will be injured and decay, and the plants will suffer in consequence. The roots of the Croton are soft and spongy, and are therefore liable to damp off if the soil becomes wet and sour on the one hand, or too dry on the other. Great care and attention should therefore be paid to watering at the proper time, and in sufficient quantity to keep the plants in a healthy growing state.

THE USE OF MANURE.

It has been truly said that one of the secrets of success in the cultivation of any plant is the frequent and judicious application of manure. This is especially so with regard to the Croton. The great amount of foliage which a large and healthy plant has to nourish soon extracts all the fertility from the soil in which it is potted. It is quite different with plants growing in the open air. The soil in which they are growing is always receiving, more or less, natural manures from the rain, for rain and snow never fall to the earth without carrying fertilisers with them. As a matter of course plants grown under glass receive none of these, consequently if they are to be grown successfully manures must be applied artificially, and in greater quantities to large plants that have filled their pots with roots and are growing vigorously, than to those whose growth is at a temporary standstill. The fertilisers I apply to Crotons are liquid cow manure and soot. These are thoroughly mixed together and used when watering.

INSECT ENEMIES.

Crotons are subject to the attacks of several insect pests, but the worst I think is red spider. If once this has possession of any plant its health is ruined in a short time, and the leaves fall one by one, completely disfiguring it if the spider is not checked at once. The yellow varieties I find are more subject to its attacks than any of the others. The best plan is to give the plants a thorough, and individual, syringing as soon as the pest appears and wash it clean off. But prevention is better than cure, and I think if the syringe were used judiciously every day red spider would be kept under.

Thrips are also great enemies to the Croton; if once they get on a plant the leaves are soon disfigured and ruined, no matter how excellent the treatment may have been. A sharp look out should be kept at all times for this pest, for, unlike red spider, its effects on the plant are not seen all at once, and it is only by close investigation that its presence is discovered in its early stage of development. To get rid of thrips I know two methods—the first is by fumigating the house, and the other by syringing the plants with a decoction made from tobacco paper mixed in water.

Scale is another pest which sometimes infests Crotons, but it is easily killed by syringing with a little petroleum mixed in water and kept in perpetual motion while being applied to the plant. Mealy bug can be destroyed in the same way.

POTTING AND TRAINING THE PLANTS.

I have said nothing about draining, potting, and stopping the shoots to make well-furnished bushy plants, or about bent, moisture, and the

ventilation of the house. The pots should be thoroughly cleaned and well drained for all plants that have to be grown for any length of time in them, and in potting the plants are placed a little lower than they were in their previous pots to cover the top of the ball. The soil is pressed firmly down, and when finished sufficient space is left at the top of the pot for watering. The plants are trained with as few stakes as possible to put them in shape, and the strong shoots stopped shortly before they begin to grow in the spring, to make them branch out and furnish the plant with fine leaves from top to bottom. The temperature of the house should be kept at 70°, and ventilation afforded when the heat rises above that degree in sunny weather, and it is allowed to rise to 80° or 90° with air in the summer time. When the plants are growing they require abundance of water. They are syringed twice a day, and the bed and path damped frequently.—P.

ROYAL GARDENERS' ORPHAN FUND.

LIKE Mr. J. B. Stevenson (page 222), I find it very difficult to persuade gardeners to subscribe to this, in my opinion, deserving Charity. It has always been a mystery to me why they will not do so, but I am constantly met by the same remarks as your correspondent. At the present time I have no private gardener on my books, although I have acted as Local Secretary since the Fund started. I have much more difficulty now than I had at first in getting gardeners interested, and have thought it would be a good plan to inaugurate public meetings in some of the towns or districts where gardeners are numerous, and then for our new Secretary (who, by-the-by, I congratulate upon his appointment) to come and explain the objects and working of the Fund.

I quite feel there are times when it is necessary to give the benefit to more than one child, but not when there are several others of the same family earning money. There is no doubt gardeners as a class are not overproud. A gentleman a few days ago told me it was difficult to get good gardeners. I pointed out to him he was paying his mechanics and labourers better than he paid his gardener. Notwithstanding this, however, our Fund ought to win more support than it does.—A. J. BROWN, *Local Secretary, Chertsey and District.*

NOTES ON YOUNG VINES.

To have Grapes ripe at the end of March or the beginning of April the Vines to produce them must be started not later than November, and as they will have to make growth and perfect the crop under adverse external climatic conditions, it is imperative that cut-backs of last year's raising should now receive their final shift, so as to allow time for them to make and mature a good growth early. The pots, 12 inches in diameter, must be clean, efficiently drained, and have a layer of the roughest of the compost on the drainage; avoid bones, as they favour various animal pests. Pot firmly in good fibrous loam, with about a tenth of old mortar rubbish, a pint of steamed bonemeal, a quart of soot, and a gallon of wood ashes to each barrowful of loam. The Vines are best placed on shelves over the hot-water pipes. Keep the house rather close, and if the weather be bright shade for a few days. Train the canes about 4 foot distance from the glass, and give all the light practicable to insure the solidification of the growths.

The planting of young Vines should be done when they are starting into growth, and not more advanced than an inch or two. Where provision has been made for inside and outside borders the Vines should be planted in the former, which will be sufficient for several years, as a width of 4 feet is ample the first year, and about 2 feet width can be added annually. Some growers prefer to do this every second or third year, adding to the border about 4 to 6 feet width. The Vines, if cut-backs of last year, may be shaken out and placed in position either before or after they have grown to the extent of an inch or two, the roots being disentangled and spread out evenly in the border, covering them about 3 inches deep, and watering moderately to settle the soil about them. Vines of the present year's raising will not need to be planted for some time yet. They are preferably raised in squares of turf, and may be planted when the roots are protruding through the sides, the breaking of the rootlets extending beyond favouring a fibrous root formation, or if in pots they should be turned out before they become root-bound. They will require a temperature at planting suitable to Vines in growth—that is, 60° to 65° at night, and 70° to 75° by day, with an advance of 10° to 15° from sun heat. Vines of last year, however, should be allowed to start unaided, syringing them two or three times a day according to the weather, and ventilating freely at 65°, with a little from 50°.

Young Vines planted last year and cut back to the bottom of the rafters or trellis at the winter pruning must be encouraged by gentle fire heat to allow time for their making and perfecting a good growth. The laterals should have their points pinched out at the first leaf to a height of 6 feet up the canes, which will cause the buds in the axils of the principal leaves to form fruit buds and become plump for next season's fruiting; above that height they may be allowed to grow. It is a better plan, however, to stop the cane at about 7 feet 6 inches, train a lateral from it as a continuation, stop this at 3 feet, and so on until the top of the house is reached, stopping all laterals to one joint, and sub-laterals to one leaf as made. This secures the roughly ripened growth and a stout cane from the base upwards. Where the canes have been pruned to three buds of the lot on of the rafters or trellis the growth from the uppermost should

be trained forward as leader, and the laterals or side-growths from the rod be trained one on each side, pinching them at one or two joints beyond the show for fruit, this being the object to test the varieties, and afterwards keep the laterals pinched to one leaf as produced. It is not wise to allow the Vines to carry many bunches the first year, but regulate the bearing according to the vigour of the Vines.—GROWER.

TECOMA JASMINOIDES.

ALTHOUGH by no means a new plant, *Tecoma jasminoides* (fig. 60) is unknown in some gardens. When properly managed it is a beautiful plant for greenhouse decoration, and is usually much admired. The flowers are produced freely, and vary from white with a rosy centre to a uniform pink hue, differing in the brightness of tint, and some of the best marked of these variations have received distinctive names. The plant succeeds in a compost of turfy loam, peat, and sand, or good leaf soil can be substituted for the peat if more convenient. Planted out it grows freely, but it also thrives in a pot, needing thorough drainage in any case.

SOUTH AFRICAN FRUIT.

DURING the last month connoisseurs in fruit have had the opportunity of enjoying what is to most a new luxury. This is the finest fruit of Cape Colony, some of which has been placed upon the London market. There are still great difficulties in the way of its transport, as freezing destroys it, and the maintenance of a cold chamber at a proper temperature gives more trouble than the steamship companies like. But what does arrive in good condition is incomparably good. The large heart-shaped Plum, as full of juice as a Peach, Apricots with a double share of Apricot flavour, Peaches without a suspicion of the bitterness of Californian Peaches, and Williams' Bon Chrétien Pears, are the most prized. There are also three varieties of Grape, small Black Cluster Grapes, and two large varieties, with Muscat flavour, one black and the other white, all grown out of doors, but not inferior to English hothouse Grapes.

The Cape has a great advantage over California for profitable fruit growing. Its seasons are the converse of ours. While we are freezing, the South African sun is ripening the orchards and vineyards of the Old Colony. Nature does so much for the Cape farmers that we wonder that they have not done more for themselves. The perfect climate produces fruit of a flavour unsurpassed in quality, and in quantities as great as Nature almost unassisted will grant. In January, when dessert on English dinner tables is supplied mainly by the dried fruits—the Raisins of California ripened in the previous summer, dried Plums from Bosnia, or dried Figs from Ionia, with only the Orange and hothouse Grapes to give juice and lusciousness—the colonists are picking the last of the Strawberries and Apricots for themselves, and making ready for sale or export exactly the kinds which those who are compelled to eat dried fruit here and in the United States would welcome most eagerly. Early Grapes, exquisitely flavoured Pears, early Peaches, fresh Figs, Plums of a size and flavour surpassing any grown in this country except in the hottest summers, are ripening on the trees of the "Old Colony."

February at the Cape produces the finest of English Peaches and Nectarines, mainly of the late-ripening varieties, which are as a rule the very best in flavour, even of these choice fruits. The difference is that what can only be grown in perfection under glass here, or under exceptionally sunny walls in favourable seasons, is there produced in abundance on standard trees. This fruit can be in London within a month of being gathered, and packed in cold chambers is brought here with the bloom still on the Plums, which look and taste as fresh as if gathered in the garden. This is at a time when the east wind is whistling through the streets, and not a bud as yet appeared on our own Plum and Peach trees. It is in February, also, that the Cape Grapes come to perfection, and have the best and truest flavour. Of these the Colony produces one variety in rude abundance, and does produce a few, and might produce a great quantity, of very high quality.

Wine-making is an ancient industry at the Cape, and the most remarkable thing about the Cape Colonist's wine is that though it has never been properly managed or developed, the growers have always succeeded in producing one wine of high quality. This is the Constantia, which has in it the guarantee, which no one seems ever quite to have accepted, that the Cape climate can bring to absolute perfection the essential vinous constituents of the Grape, which no other country is quite known to do, except the port wine growing district of Portugal. Roasting sun, good soil, and something else, probably a very dry, pure air, do this, and there always has been a district of the Old Colony where these natural qualities of soil and climate were so far appreciated as to make vineyard planting a staple industry. But it is one thing to grow Grapes for wine, and another to grow them for the table. At the present moment there are tons of little black vineyard Grapes arriving from the Cape. Their condition and taste are an object lesson both as to what the Cape can do and what it might do. These are of a first-rate flavour, but of all sizes, unthinned, crowded on the clusters, with many half-ripe inside the bunches. They are, however, pleasant to taste, and remind

the buyer of the days of vintage abroad. Their flavour is also evidence of how excellent they might be, if properly pruned and thinned. Later, in April, very fine white, or rather green, Grapes, grown well and carefully packed, come from the Cape. They are of medium size, of a beautiful clear green like chrysopræse. The flavour is not that of Muscat, but is excellent of its kind.

For early winter fruit the Cape also contributes varieties which are most welcome at that season. Figs ripen in November, and there is practically an unlimited market for fresh Figs in London. The Cape colonists are anxious to develop a business in dried Figs, so that they may rival Smyrna. The Karoo is looked upon as the future centre of Fig

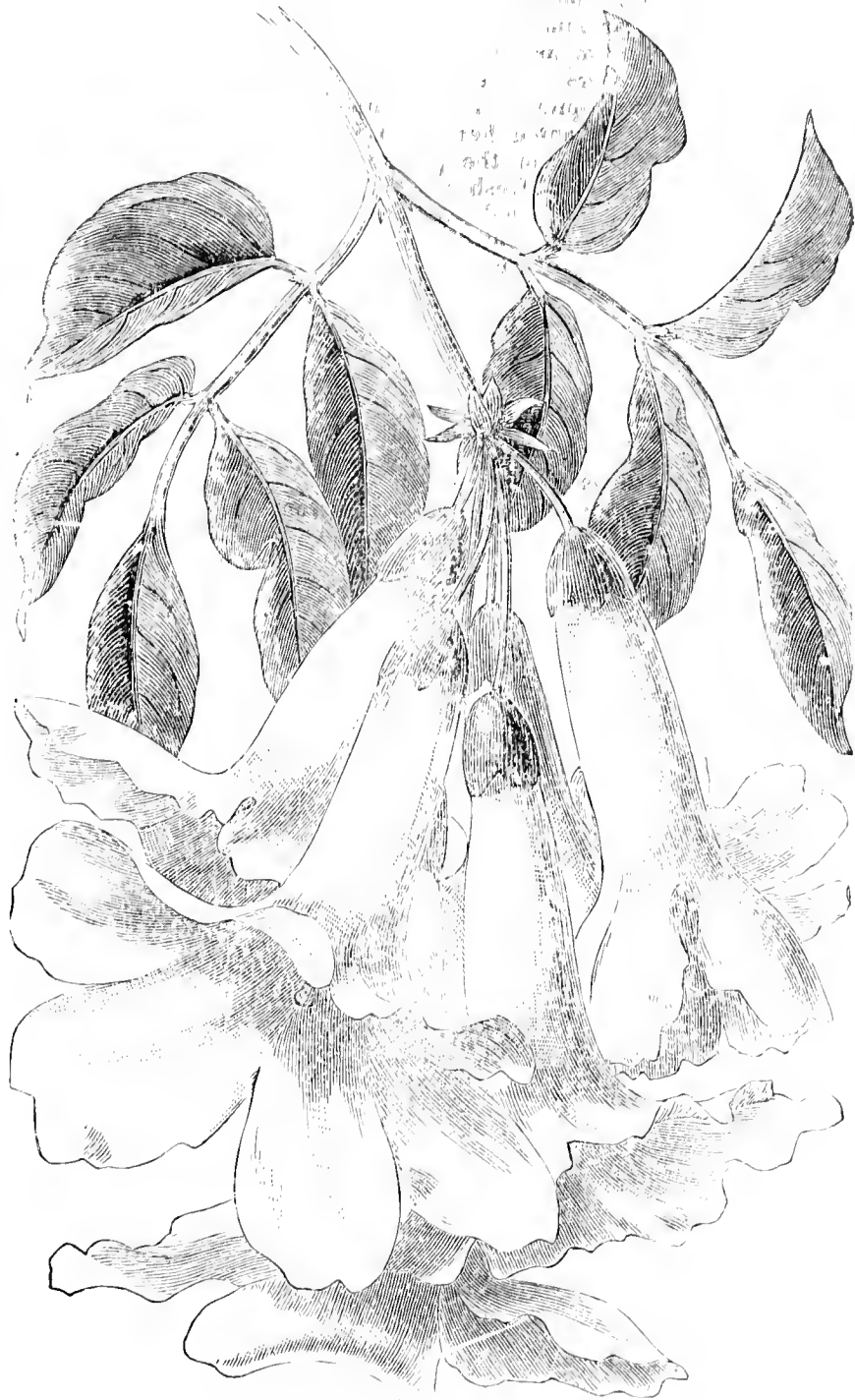


FIG. 60.—TECOMA JASMINOIDES.

growing and drying. It is intended to introduce the Fig insect which assists in bringing the Smyrna Figs to perfection. But we think that before this industry is developed the trade in fresh Figs will be so large as to repay the growers. The price in this country, even in the natural season, is so high that there would be an immense margin for profit if they were offered here in December. In early winter Cape Strawberries and Apricots are in season together, the former being in perfection in November, while the latter last all through December. It is maintained that these Cape Apricots are, without exception, the best in the world. We have tried them both fresh, as delivered here, and preserved, and this experience, limited necessarily to a few cases, entirely bears out the claim made for the fruit. It is incomparable.

Loquats in October and Cape Gooseberries, a wild variety, which in the form of preserves is almost the best confiture in the world, make up the list of the best Cape fruits, and we have no hesitation in saying that these, when properly cultivated and of good varieties, are some 25 per cent. better than any other, except certain varieties grown in England and Western Europe under glass. It is worth remembering also that in addition to the happy accident of the Cape autumn occurring at a season which enables its fruits to be sent here in winter and early spring, there are differences of season in the colony itself. The first plateau, which runs all round the coast, produces its crop at an interval from that on the second plateau, while the roasting heat and drought of the Western

province cause a different season for the crop from that in which the table Grapes ripen in the East, where there are rains in November and February.

Nor are the Cape growers handicapped, as are those in the West Indies, by want of adequate steam service or easily reached markets. The huge increment of wealth in the goldfields has caused passenger lines to increase their steamers in number, size, and accommodation. These steamers, meant to carry those enriched by the goldfields, or those who in hope of being rich are careless of expenditure, are the ideal vessels for fruit transport—speedy, roomy, and furnished with ample cold storage. Yet Cape fruit, except the little black Grapes is very dear. It is still a costly luxury, not a popular delicacy. The Japanese Plums grown in South Africa were recently selling at 1s. apiece in Covent Garden, Cape Peaches were 1s. 6d. each, and Pears 8d. The quality of all three kinds was perfect, but they could only be regarded as specimen fruit. While the crop remains dear and uncertain it is not strange that little Cape fruit is yet imported, compared with the demand. The blame lies entirely at the doors of the growers themselves. Their Government is endeavouring to awaken Afrikaner opinion on the subject. They need teaching that only the best fruit is wanted here, that this must be carefully sorted, beautifully packed, so that in the package the fruit looks like a piece of decoration, or, at least, as fresh as when plucked, and that then the English public will pay a good price for it. At present the farmers are mostly too ignorant and indolent to do this. The fruit, as the Government botanist complains, is thrown into kerosene tins, or any chance receptacle, and sent off to be hawked about the local towns instead of being properly graded and sold in Europe and America. They should be taught the methods of California.

Unlike the Cape, California has no near markets, as at Cape Town and Johannesburg. The shortest journey is to Chicago, 2500 miles by rail, which costs £10 for every ton of fruit. New York is 3500 miles distant, yet tens of thousands of tons are sent by rail to each city. They also ship their fruit another 3000 miles by sea from New York to England, making 6500 miles in all, and they make this pay, though their season is the same as our own. If California had the season of the Cape, and could get its Peach and Grape crops into our market in the winter and spring, it would double its industry. But the organisation of the Californian growers is perfect. The Fruit Growers' Union, in "acre shares," so that the smallest and the largest owners are members, collects the fruit, despatches it, and finds a market. The Cape growers have only to study the Californian system of business and modern modes of culture, and Nature will complete an industry as valuable as the goldfields and more lasting.—("The Spectator.")

PRIMROSES AND POLYANTHUSES.

I AM exactly of the same opinion as "A. D." (page 220) with regard to the sowing and general treatment of these plants, and, like him, wonder at the unnecessary trouble some growers put themselves to in obtaining a stock of plants. There can be no question as to the relative advantage of autumn over spring sowing of Polyanthus seeds; especially is this true when it applies to indoor sowing.

I always make a point of sowing as soon as the seeds are ripe enough to gather from the plants, in drills sufficiently wide apart to allow of the ground being kept free from weeds. Old seed is very stubborn of germination, even when sown indoors; but with outdoor sowing of quite new seeds apparently every one germinates with regularity. By sowing in August, and the beds kept free from weeds, the resultant plants become sturdy and in fine condition for planting in their permanent or temporary quarters in April. The latter course is adopted when providing for the flower garden in autumn, several beds being annually furnished with them both in mixed and separate colours. For flower beds I find the large golden coloured sorts the most effective, as the mixed ones, though individually pretty and interesting, pale before the self-coloured flowers.

"A. D." correctly describes the method of autumn sowing and spring planting as simple and satisfactory: nothing could be more so. Plants intended for the flower garden in autumn are given the benefit of a shady border, one situated under a north wall, where their growth proceeds slowly, but surely, even in hot summer weather. The same border is reserved for the purpose every year, and is kept in a suitable condition by the addition of decayed manure and old potting soil at the time of or just previous to planting. After they have done duty in the flower garden they are thrown away, unless there are any of special merit and it is desired they should be retained for seed purposes. By making an annual selection of the finest it is easy to get an assortment of the best either in separate shades or in mixture.

The abnormally dry state of the soil, and the absence of water for daily watering of the seed beds, has resulted in smaller plants than I have had in any previous spring; but with fresh soil and showery weather they will no doubt make headway, and perhaps become quite large enough by October next. In the pleasure ground borders they will stand three or four years, the soil being somewhat heavy, and many positions shady; still blanks occur from one cause and another, and are made up from the annual sowing, either in autumn or spring. In light soils it would be necessary to plant stock plants in cool positions, or the tax imposed on them in seed-bearing would cause a partial if not a total collapse at the critical time. During tropical

weather, which invariably occurs during the seeding time, the plants flag badly when exposed to full sunshine. A mulching of the surface with short manure would sustain them materially during the summer months. Lifting and dividing is not worth the trouble, especially when seed saving and sowing is so simple. They reproduce themselves from seed fairly true to variety when planted in separate colours for the purpose.

It would be advisable in the case of any specially choice, which it is desired to perpetuate true to character from seed, that some means of protection be provided against insect fertilisation, muslin being as good as anything. For shrubbery borders, mixed colours afford the greatest interest, but for bedding separate colours, especially the yellow Polyanthuses, make the brightest display. Taking into account the ease with which they can be cultivated, and the floral feast made in summer, the wonder is they are not much more largely grown.—W. S.

THE YOUNG GARDENERS' DOMAIN.

YOUNG MEN'S DREAMS.

RESPECTING the article on page 99, to which "Thistle" refers on page 174, there certainly is much there that should demand the interest of the young readers of the Journal, and to some it might prove more useful than the reading of an article concerning the cultivation of a plant. I quite agree with "Thistle" that it would be better if all the young gardeners knew what was expected of them before they started gardening; doubtless it would save many a pang, certainly there would be less "weeds" of which to complain. But what of the amount of trouble involved in informing every beginner of the numerous items he would be subject to as a gardener? Only years of experience will convince him what gardening really is. I am of the opinion that not a few who start gardening do not enter into it seriously, and eventually awake and realise they have begun at the wrong end, or mistaken their calling.

Many of the young hands who are turned out of private gardens and nurseries have, I consider, a poor foundation for making a practical man, more especially should they solely follow the private garden. The reason for this, I think, is that having had about two years in the glass department, they prefer to continue indoors rather than seek experience in the kitchen garden or pleasure grounds, though there are, of course, exceptions.

When I first applied for a vacancy in a garden and asked for particulars, I was told to a willing lad there was plenty of work, and such I found to be true; but had I been told then that it would fall to my lot to assist in fitting hot-water pipes, and in planting acres of forest trees, another occupation might have been mine. However, I hope to see other remarks than mine in connection with young men's dreams, as it will give additional interest for the readers of the Domain.—PARVO.

BEGONIA MANICATA.

THIS is one of the fibrous-rooted Begonias which is oftener seen in a neglected condition than otherwise. When well grown, as it fully deserves to be, it makes a splendid plant for house furnishing during the winter and spring, with its glossy green foliage and tall spikes of small pink flowers. If good stout cuttings made from the leading shoots are inserted round a 48-pot in a light sandy compost, they will root readily in a night temperature of 60°. As they are of a succulent nature there is a danger of their decay if kept too close and wet at this stage. To get good plants for winter flowering the cuttings should be put in by the end of March. When well rooted transfer the young plants to a small pot, using a compost of three parts good-turfy loam to one of leaf mould, with enough charcoal and sand to keep it porous. A warm pit is suitable during the summer months, where they can have plenty of light and air. When thoroughly established a weak stimulant will prove beneficial in keeping the foliage a healthy colour and producing good stout spikes; a thin shading will be necessary during the hottest hours of the day.

In the autumn the plants may be given a light place in a vinery, the stove being too close and moist. Care must be taken in staging and removing the plants not to injure the foliage, or the appearance of the plants for decoration will be spoiled. With judicious feeding and top-dressing they will remain satisfactory a second season in the same pots. We have two such plants now in bloom, each carrying about two dozen spikes. They are, of course, rather straggling as regards the growth, but this we consider enhances their beauty, as formality is done away with, which is a thing to be desired from a decorative point of view.—M. I. P.

THE GLOXINIA.

GLOXINIAS are amongst the finest flowering plants that are used for the decoration of the stove during the summer and autumn months. Not only do they make a beautiful display, but the flowers are also valuable for cutting, and by potting at different times they may be had in succession for several months. Old tubers that are stored under the stage or elsewhere should be carefully examined, and any that show signs of growth must be brought from their resting place, leaving the dormant ones for succession. If there are no signs of growth, place the pots containing the tubers in a temperature of 65°, syringing them twice daily. As soon as they commence to grow they should be repotted, removing the old soil from the tubers and putting them into well drained pots, using a compost of equal parts of good fibrous loam, peat, and leaf soil, with a liberal addition of sand, keeping the top of the tuber level with the surface of the soil.

The tubers may be put into small pots and be moved as required, or they

may be put into their flowering pots at the commencement. By practising the latter method a saving of time is effected, and they do equally well. Stand the pots in a light but shaded position, and apply water sparingly until the roots have taken possession of the soil, when they will require an abundant supply, and the application of liquid manure once a week will be of great benefit to them. Syringe well every day to prevent an attack of thrips or red spider. It must be remembered that the Gloxinia is a shade and moisture loving plant, and care should be taken that these essentials are supplied.

In addition to potting the old tubers successionally, the season of flowering may be still further prolonged if young plants are raised from seed each year, as these under suitable management will form a succession to the old plants. Seeds may be sown in February or March in well-drained pots in a light sandy compost; cover very thinly, place a square of glass over the pots, and plunge in a bottom heat of 80°; keep them very moist and shaded until the seeds have germinated. When the seedlings are large enough to handle prick them off into pans, in a compost similar to that in which the seed was sown, replacing again in bottom heat, so as to encourage them to make as much growth as possible. Before the young plants become crowded place them into small pots, using a compost as recommended for the old tubers; put them in the stove, as near to the glass as possible to prevent them becoming drawn and weakly, and shade from sunshine; when they have made sufficient growth transfer them to their flowering pots, 4-inch pots being quite large enough.

As the leaves, both of the young and old plants, begin to turn yellow, water should be gradually withheld, but they must not be dried too rapidly. When all the leaves have died the tubers may be taken from the pots, freed from soil, and stored in boxes of cocoa-nut fibre refuse or sand in any dry place, with an even temperature of about 55°; or they may be allowed to remain in the pots, which should be laid on their sides under the stage of the greenhouse or stove. They must not, however, be allowed to get wet, or the tubers will either decay or start prematurely into growth, and such a state of things should be carefully guarded against.—S. P.



FRUIT FORCING.

Vines.—Earliest Houses.—Colouring will shortly be proceeding in the very early started houses. To insure well developed berries afford a thorough supply of tepid liquid manure, and mulch the border at once with an inch or two of partially decayed manure, preferably rather lumpy. Stable litter, having the strawy portions shaken out, thrown into a heap, and when commencing to heat turned over twice, forms excellent mulching material. This will give a stimulus to the roots and secure healthy foliage, while the moisture will be sufficient, in most cases, for the Vines until the Grapes are cut, but they must not lack water at the roots, as this will cause the premature ripening of the wood and the loss of the principal leaves, which may induce fresh growth when the Vines should be going to rest. Damping the house must be continued until the berries are well advanced in colouring, after which reduce the moisture gradually, and insure a circulation of warm air day and night by regulating the ventilation judiciously. The temperature should be maintained at 70° to 75° in the daytime, with a rise of 10° to 15° from sun heat, allowing the temperature to fall during the night to 65°, or even 60°.

Vines in Flower.—Afford a circulation of warm rather dry air, and a temperature of 65° to 70° at night for Black Hamburgs and similar varieties, and 70° to 75° for Muscats. The extra warmth draws out the bunches, aids the development of the flowers, and the potency of the pollen. Muscats and other shy-setting varieties should be brushed over with a camel's-hair brush about the time the blossom is fully expanded, so as to rid the stigmas of the caps and glutinous substance, choosing a warm part of the day after the house has been freely ventilated. This will render them fitted for fertilisation, which should be effected by brushing them over with a brush surcharged with pollen taken from such free-setting sorts as Black Hamburg and Alicante.

Succession Houses—Disbudding.—It is not good practice to attempt this until the bunches appear in the points of the shoots, and then it ought not to be done in a hurry, or a large reduction be made at one time. Proceed gradually and with determination, so as to give as little check to the Vines as possible. Retain no more shoots than can have the full benefit of light, as crowding is one of the greatest evils in Vine culture. Allow for the due extension of the laterals, for on this depends sustained root activity till the crop is perfected.

Stopping the Growths.—The bearing shoots should be allowed to extend in accordance to the space. If this is limited, the Vines being close, the shoot may be pinched at the first joint beyond the bunch, and this should be done when the leaf at the joint is the size of a penny. If there is a moderate space between the rods, allow two joints beyond the show for fruit. When there is abundance of room allow the shoots with fruit to extend three or four leaves beyond the bunches before taking out their

points, doing this when the leaf at the stopping joint is the size of a farthing. Laterals will push from the joints both above and below the bunches. Those below may be rubbed off except from the two lowest leaves, which should be pinched at the first joint; or if there is a good distance between the spurs on the rods all the laterals below the bunch may remain, pinching to one leaf. But laterals above the bunch may either be pinched to one joint, or allowed to extend until available space is fairly furnished; then pinch, and keep them within bounds afterwards by stopping to one joint as made.

Thinning.—This is a very important operation both as regards the bunches and berries. Remove all superfluous and duplicate bunches before they flower. Setting depends on the good form of the bunch, and on its receiving the essentials of fertilisation. Free setting varieties may have the berries thinned as soon as they are out of flower, but Muscats and other shy-setting varieties should not be thinned until it is seen which berries have been properly fertilised by their taking the lead in swelling. Every berry should have room to swell without becoming wedged, and yet leave enough berries to insure the bunch retaining its form when cut.

Watering, Feeding, and Mulching.—Until the Vines are in leaf they require very moderate supplies of water, sufficient only to keep the soil moist, but when the leaves are full-sized the evaporation from them is considerable, and from that time until the fruit ripens they must not lack water at the roots. It is difficult to state how often the borders will need watering, through their being so variable in dimension and formation. A narrow border will require watering twice as often as one double the width, assuming the Vines to be equally extended and cropped, while a border of loose materials will need water much more frequently than one formed of firm retentive loam. Consequently the grower must be guided by the state of the Vines in relation to the rooting area, and have due regard to the weather, as water will be required much oftener in hot, dry weather, than when cold and dull. The proper procedure is to examine the border, and when water is necessary give it abundantly. Surface dressings of artificial fertilisers are of much benefit for the health of the Vines and the swelling and perfecting of their crops. There are several advertised which are excellent, and may be applied, according to the instructions, at intervals of three to six weeks. A dressing may be given as soon as the Vines start into growth, a second when they are going out of blossom, another after the Grapes have been thinned, a fourth during stoning, and a final one when the Grapes commence colouring and are taking the last swelling.

Liquid manure is more prompt in action than a top-dressing, and may be supplied whenever watering is required, taking care that it is not too strong, and is warmed to the mean temperature of the house. Vines restricted to narrow borders will need higher feeding than those with large rooting areas, affording liquid manure whenever water is requisite, but it is well to change the food occasionally. A mulching of short, sweet, lumpy manure, as stable litter freed from straw, about an inch thick, and added to from time to time, so as to maintain that thickness, is excellent for ordinary borders, but those composed of light porous materials should have a mulching of well-decayed manure, as it lies closer, and the roots of the Vines are attracted to it through its retaining moisture better and longer.

THE KITCHEN GARDEN.

Globe Artichokes.—Plants of these not having been crippled by frosts are growing strongly, and suckers are exceptionally numerous. Remove the protecting material at once and thin the growths freely, as for cropping purposes three or four strong ones to a clump will do better service than greater numbers. Under starvation treatment Globe Artichokes are unsatisfactory. Remove the soil, to the extent of baring some of the root, to a distance of not less than 15 inches from the stems, and after dressing heavily with decayed manure, return the soil. The next best thing is to mulch with manure in April or early in May. These Artichokes may easily be raised from seed, either in gentle heat now or by sowing in the open ground next month, but rooted suckers from ordinary stocks are preferable.

Asparagus.—A heavy covering of manure keeps the beds cold and unduly moist, retarding growth accordingly. Comparatively dry strawy manure hovered over the beds does not keep the ground so cold, but yet serves to protect the points of the delicate shoots, many of which are injured by frost just as they are coming through the ground. Decayed manure should, then, be carefully removed, and the surface of the beds lightly loosened with forks. If the plants and roots are very near to the surface a top-dressing of 3 inches of fine light, moderately rich, soil will act beneficially. Where the plants are grown singly—that is to say, not less than 2 feet apart—the finest shoots are produced, and if blanched stems are desired a mound of fine vegetable mould should be drawn up and banked over each clump. It has to be moved with the hand when the shoots are traced out and cut, and returned after the cutting. Seeds may be sown now, or a fortnight later, and early next month; or just when top growth commences new beds may be formed with young plants.

Celery.—Plants resulting from seeds sown now in gentle heat should maintain the supply till next spring. Standard Bearer and other known hardy red or pink varieties are the best for present sowing. Very early raised plants are best moved twice before they are put out. By the time these are thoroughly rooted, beds, raised in preference to sinking trenches, should be ready for their reception. The finest exhibition Celery is in some instances grown in raised beds, kept together by means of stakes and boards. The plants are put out in a mixture of loam, garden soil, manure, and burnbake, and the blanching eventually accomplished by means of bandages of brown paper. Celery forms a good successional crop to Brussels Sprouts, Broccoli, and Borecole, and as the ground is cleared of

these the trenches may, with advantage, be got ready. Especially is early digging desirable where the ground is naturally of a clayey, bad working nature.

Lettuce.—Lettuces can be grown to perfection on the ridges between early Celery trenches. If a width of nearly 4 feet is allowed, there is room for a central line of Dwarf Kidney Beans and a row of Lettuces on each side, all coming off the ground before it is wanted for earthing the Celery. Well hardened Lettuce plants may be planted either on ridges or the flat, and more seed sown at the same time. Plants raised moderately early ought now to be large enough to prick out 3 inches apart in sheltered beds of good light soil. During a showery period slugs are troublesome, and are very plentiful this spring. They should be trapped under heaps of Broccoli or other leaves, and, in addition, frequently dusting the plants with soot and lime is necessary.

Sowing Peas.—If several rows of Peas are sown at one time they are apt to give pickings of pods also at much the same time. A good rule to follow is to sow one or more rows, according to circumstances, directly the plants resulting from the preceding sowing are coming through the ground. It is a mistake to crowd either the rows, or the plants in the rows. Allow room to develop, and admit light and sun to all. The rows should at least be as far apart as the known height of the varieties, and a pint of a good main crop sort is enough seed for a row 60 feet long. Open wide rather than narrow drills, and cover the seed with 3 inches of fine soil. Protect from slugs as advised in the case of Lettuce, and if birds are troublesome, either cover with galvanised wire netting, or strain a network of black thread over the rows of plants.

THE BEE-KEEPER.

SPRING DWINDLING.

DURING the early spring months bee-keepers are often perplexed owing to the comparative weakness of many of their stocks, which, instead of increasing in strength, gradually become weaker. They continue in this condition until a favourable spell of warm weather sets in. This, for want of a better name, is called spring dwindling. But what is the cause? The chief causes are old queens, shortness of stores, a damp or badly ventilated hive. It may also happen with a colony headed by a young queen introduced the previous autumn. This usually results when the hive is crowded with bees hatched during the summer months. These will survive the winter, but will succumb during the changeable weather usually experienced in early spring, and by the time the young queen has filled the hive with brood and bees the season will be well advanced.

In the case of old queens, which from various causes may not have been removed, the dwindling is more apparent than in the above, as she would not commence to lay for some weeks after a young queen had filled several combs with brood. This fact alone shows the advantage of having all colonies headed by prolific young queens.

Bees cannot be expected to increase in numbers if there is a shortness of stores in the hive. The same effect, however, may be caused by feeding late in the autumn, so that the bees have not sufficient time to seal their stores before the cold weather sets in or the temperature is too low for them to carry out this necessary operation. A damp or badly ventilated hive is more often the cause of spring dwindling than anything else. This may be quite unknown to the bee-keeper until it is too late. It is such a simple matter for the interior of the hive to become damp, owing to a leaky roof, and how can bees be expected to progress when in this unsatisfactory condition?

EARLY SPRING FLOWERS.

Owing to the mild winter and the favourable weather experienced of late, the early spring flowers already in bloom are somewhat numerous. But, strange to say, some are later than usual. For instance, the common Daffodil, which is plentiful round our apiary, is not yet showing the colour of the blossoms, whereas in some former years we have found blooms of this variety fully expanded at this early date. Probably the hot weather experienced last autumn is the cause of it. The Winter Aconites are now over. Bees were observed working on them in January. Snowdrops have been plentiful, and are not yet over; they have not been visited by the bees as freely as we have sometimes observed them. This was probably caused by the wealth of Crocuses, which have been a mass of bloom for several weeks past. These are visited by the bees more than any other of our early spring flowers, owing to the large amount of pollen that is obtained from them. Unfortunately sparrows are very fond of the blooms, and play havoc with them. In some districts this is so serious that their cultivation has had to be given up. The different varieties of Scillas are very showy, and are not neglected by the bees.

The common Palm Willow is now in bloom. From this the bees derive much benefit, as, like all the Salix tribe, it yields a large amount of pollen early in the season, and is much more valuable than the other varieties.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Lawn Patchy (E. W.).—We have never known half-decayed cow manure to kill grass, but the reverse. Of course, if applied too thickly it would smother the grass. If it be actually killed it would be advisable to sow the whole with seeds, not a mixture containing Clover, but of finest lawn grass seeds only, at the end of this month or early in April, choosing mild weather.

Potting Young Melon Plants (Idem).—In potting young Melon plants from the seed pan they should be sunk to within about half an inch of the seed leaves, or when they are leggy, about an inch. If the seedlings have been grown sturdily they will not have much more than an inch of stem, therefore the roots in potting will only be just covered with soil; very deep burying of a long stem is not desirable. We recommend the cordon system of growing in houses or on trellises, because we find it most satisfactory after trying it extensively.

Large Beetle (W. P.).—The fine specimen is the great water beetle, *Dytiscus marginalis*. It is quite harmless to vegetation, but voracious in both the larval and perfect state, even not sparing members of its own family. It may do harm to spawn and fry of fish, otherwise it is useful in keeping down insects that feed upon aquatic vegetation.

Leaves of Tomato Seedling Discoloured (R. L.).—The second leaves appear to be affected by what is termed "curl," which gives the leaflets a peculiarly twisted appearance, due to the tissues being in part injured or destroyed, and in some cases discoloured or browned. It has been attributed to "brunure," or browning disease. We, however, could not detect any trace in your plants of the parasite, hence consider the appearance due to sudden and excessive evaporation from the leaves. We can only advise more air, especially early in the day. There does not appear anything to be alarmed about, the plants being sturdy and apparently healthy in the stems. The roots, however, are rather browned, possibly by being out of the soil.

Grubs from Soil (W.).—The grubs are those of the so-called "fever fly" (*Dilophus vulgaris*). There are two broods, one appearing about May and the other in the early autumn. The larvae or grubs are both saprophytic and parasitic in mode of life—that is, they live on vegetable matter in a state of decay, commonly in both horse and cow manure, and on the roots of living plants, such as grass and corn in fields, roots of Hop plants, and Lettuces in gardens. The eggs are often laid in manure, and thus the grubs are introduced to the plants; but the flies also deposit eggs on ground rich in decaying vegetable and animal matter, we having found them abundantly in the mulching of Vine borders, but not, so far as we could make out, feeding on the Vine roots. The best remedy is gas lime, but it must only be used on bare ground. Half a hundredweight per rod should be spread on the surface evenly, and left there for a month or six weeks, then dug in with a fork. Where there are plants, such as roots of fruit trees or Vines, apply 1 cwt. per rod of best chalk lime spread evenly as soon as slaked, and dig in, not deeply, in the course of a few days, or not longer than a week, and always choosing dry weather for applying the dressing. We have also found kainit, 7 lbs. per rod, to act promptly on grubs of this kind, distributing evenly on the surface, and leaving for the rains to wash in. In the growing season finely powdered nitrate of soda stupefies and kills the grubs. Apply 1½ lb. per rod when the ground is moist, but with a prospect of fine weather, as then the nitrate acts better on the grubs, which are usually near the surface. The nitrate must be kept from the hearts of growing plants, especially when these are moist with dew or rain.

Improving the Colour of Ferns (T. E. R.).—It is usual for plants that "have been wintered in a low temperature at rest" to become pale in the fronds, as they have not developed any chlorophyll. With fresh growth the plants would no doubt improve in colour or become greener, but you may probably secure more colour in the present fronds by using clear, weak soot water, about a tablespoonful of soot to a gallon of water, allowed to settle before use, say for three or four days after mixing. Sulphate of iron or green vitriol, $\frac{1}{2}$ oz. to a gallon of water, has a good effect on the development of the chlorophyll, but must be used judiciously.

Monkshood Poisonous (Veritas).—The statement that "persons have swooned and lost their sight for some days through inhaling the odour of the flowers" of *Aconitum napellus* is not without foundation, as the circumstance is recorded in Dr. Hogg's "Vegetable Kingdom;" it is also there stated that four gentlemen were poisoned at Dingwall through a servant ignorantly digging a root of Monkshood and serving it at dinner for Horseradish. The leaves of the plant are also poisonous, though goats and horses are said not to be injured by eating them. Having regard to the facts recorded, we should not consider it prudent to grow the plants, as in your case, close to a dwelling, where children might innocently eat the leaves or take a strong smell of the flowers. We have grown the plant for years without any accident occurring, but they were not in positions to which children had free or ready access, or near beds of Horseradish, where the roots might be accidentally dug up and used.

Temperature for Maidenhair Ferns (S. B.).—The term "Maidenhair Ferns" embraces the whole of the species and varieties of the genus *Adiantum*, but is frequently applied to the common Maidenhair, *Adiantum capillus-Veneris*, with its varieties, which is a native of Great Britain. It succeeds in a greenhouse or even a frame, hence would thrive in the position you describe, but is not nearly as useful for decorative and cut purposes as that more generally grown—namely, *A. cuneatum* and its charming form, *A. gracillimum*. *A. cuneatum* will succeed in a greenhouse, better in a warm one or cool stove, and is a native of Brazil. By keeping comparatively dry in winter the plants might be grown in the greenhouse, but they would then be at rest, for which they are all the better, and would give very useful specimens for decorative purposes and fronds for cutting; yet, as you say, in the summer months only. To have fronds in winter time it requires a temperature of 55° to 60° at night, and 60° to 65° by day, with 5° to 10° more from sun heat. In summer time the temperature rules 5° to 10° more all round in a cool stove.

Artificial Manure for a Lawn (A. B.).—The advertised lawn manures are excellent, and save the trouble of procuring separately and mixing the articles. If the latter, there is probably no better than Sir J. B. Lawes' and Sir J. Gilbert's mixture: Sulphate of ammonia, eight parts; kainit, five parts; sodium silicate, four parts; superphosphate, four parts; sodium sulphate, one part; and magnesium sulphate, one part, mixed, using 7 lbs. per rod on a rough lawn, and half that quantity on a lawn neither coarse in grass nor very mossy. If the latter, add a part of sulphate of iron to the mixture, thus making twenty-four parts, and still use at the rates named. The fertiliser should be applied in advance of sowing the renovating mixture of lawn grasses, so as to allow the salts to pass into the ground—say sow the mixture of manure a fortnight previously. For the new lawn we should use the lesser quantity of the mixture, or $3\frac{1}{2}$ lbs., adding this amount of native guano, mixing, and sowing a few days before the grass seeds, and raking in. Or use a similar quantity of rape meal instead of the native guano, especially if likely to be troubled with wireworm.

Spotted Pelargonium Leaves (W. W. B.).—The sickly spotted appearance of the Zonal Pelargonium leaves is caused by the fungus, *Ramularia geranii*, which is assisted in germination and development from spores by a wet condition of the soil and a somewhat cold damp atmosphere. There is no remedy, as the growth of the parasite is endophytic, the mycelial hyphæ being situated in the interior of the leaf tissues. Very lightly dusting the plants on the under side of the leaves with a preparation of sulphate of copper in powder, such as fostite, which has been advertised in our columns, arrests the spread of the disease, but the main points to attend to are a drier condition at the roots and in the atmosphere. No more water must be given than suffices to keep the foliage from flagging, and the ventilation should be free, so as to dissipate moisture before the sun acts powerfully on the foliage. With finer weather or the season more advanced the plants will, at least they usually do, grow out of the disease. The worst infested leaves should be removed and burnt, but do not practise extreme defoliation. A gentle warmth, about 50°, by day, would be an advantage to the plants.

Exhibiting Rhubarb (Secretary).—You are quite right. There was a slight mistake in the hurry for press in the reply to "Young Gardener" on page 226 last week. It would have been more correct to have stated that Rhubarb is exhibited as a vegetable, but used as a fruit in the form there mentioned, and sweetened with sugar. For the purpose of exhibition Rhubarb is properly classed as a vegetable in the R.H.S. "Rules for Judging." It is there stated that the "stalks should be fresh and well coloured, straight, uniform, and of medium size;" also that if included in a collection of vegetables to be judged by points 4 shall be the maximum—2 for size and uniformity, and 2 for colour and freshness. If lacking in any of the four qualifications—size, uniformity, colour, or freshness—points, or half points, would be deducted accordingly. We have said that Rhubarb when shown is "properly" classed as a vegetable, because there cannot be a fruit without a flower to produce it, and flowers are not seen on the leaves or stalks of this useful culinary plant. The late Dr. Hogg's definition was concise and sensible—namely, "Rhubarb is a vegetable used as a fruit." It is said that our American cousins compromise the matter by referring to Rhubarb as the "pie plant."

The Shamrock (Ireland).—The plant sent (*Trifolium minus*) is the generally accepted Shamrock of Ireland, but old authorities believe that the original Shamrock is the Wood Sorrel (*Oxalis acetosella*). An early writer (Sir Henry Piers) says, "Between May Day and harvest, butter, new cheese, curds, and Shamrocks are the food of the meaner sorts." Now Wood Sorrel is an agreeable salad herb, whereas Clover or Trefoil, which is usually considered as the Shamrock, is anything but palatable. Then Fynes Morrison writes of his countrymen, "They willingly eat the herbe Shamrock, being of a sharpe taste." A description applicable to the Wood Sorrel, but not to any species of *Trifolium*. Moreover, the Clovers never grow in woods, whereas the Wood Sorrel has there its native place, and coincident with this the "Irish Hudibras" states:

"Within a wood near to this place
There grows a bunch of three-leaved grass,
Called by the boglanders Shamroques,
A present from the Queen of Shoges (spirits)."

These authorities, we think, justify the conclusion that originally the Wood Sorrel was the Shamrock of ancient times.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. S.).—1, *Polystichum viviparum*; 2, *Pteris cretica albo-lineata*; 3, *P. tremula*; 4, *Adiantum Farleyense*; 5, *Pteris longifolia*. (P. H. B.).—1, *Forsythia suspensa*; 2, *Rivina humilis*; 3, *Erythronium dens-canis*. (D. T.).—1, *Mahonia aquifolia*; 2, *Andromeda floribunda*; 3, *Cotoneaster microphylla*; 4, dead. (J. C. C.).—1, *Adiantum pedatum*; 2, *Asplenium lucidum*; 3, *Polypodium angustifolium*; 4, *Nephrodium molle*; 5, *Nephrolepis davallhoides furcans*; 6, *Davallia canariensis*. (L.).—*Marica (Cypella) gracilis*.

COVENT GARDEN MARKET.—MARCH 22ND.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	3	0 to 60
Grapes, lb. ...	1	6 to 2	St. Michael's Pines, each	2	6 to 5

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0 to 0	Onions, bushel ...	3	6 to 4
Beet, Red, doz. ...	1	0 to 0	Parsley, doz. bnchs. ...	2	0 to 3
Carrots, bunch ...	0	3 to 0	Parsnips, doz. ...	1	0 to 0
Cauliflowers, doz. ...	2	0 to 3	Potatoes, cwt. ...	2	0 to 4
Celery, bundle ...	1	0 to 0	Salsafy, bundle ...	1	0 to 0
Coleworts, doz. bnchs. ...	2	0 to 4	Scorzoneria, bundle ...	1	6 to 0
Cucumbers ...	0	4 to 0	Seakale, basket ...	1	6 to 1
Endive, doz. ...	1	3 to 1	Shallots, lb. ...	0	3 to 0
Herbs, bunch ...	0	3 to 0	Spinach, pad ...	0	0 to 0
Leeks, bunch ...	0	2 to 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 to 1
Lettuce, doz. ...	1	3 to 0	Tomatoes, lb. ...	0	4 to 0
Mushrooms, lb. ...	0	6 to 0	Turnips, bunch ...	0	3 to 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3	0 to 4	Lily of the Valley, 12 sprays	0	6 to 1
Asparagus, Fern, bunch ...	2	0 to 2	Marguerites, doz. bnchs.	4	0 to 5
Azalea, white, doz. bnchs.	3	0 to 4	Maidenhair Fern, doz.		
Bouvardias, bunch ...	0	4 to 0	bnchs. ...	6	0 to 8
Carnations, 12 blooms ...	2	0 to 3	Narcissus, doz. bnchs.	1	0 to 2
Daffodils, single yellow, bch. 12 blooms ...	0	4 to 0	Oreids, var., doz. blooms	1	6 to 9
Daffodils, double, bunches ...	0	4 to 0	Pelargoniums, doz. bnchs.	6	0 to 10
Eucharis, doz. ...	2	0 to 3	Roses (indoor), doz. ...	2	0 to 3
Freesia, doz. bnchs. ...	2	0 to 4	„ Red, doz. ...	4	0 to 6
Gardenias, doz. ...	4	0 to 6	„ Tea, white, doz. ...	2	0 to 3
Geranium, scarlet, doz. bnchs. ...	6	0 to 8	„ Yellow, doz. (Perles)	2	0 to 3
Hyacinths, Roman, bunch ...	0	6 to 0	„ Safrano, doz. ...	2	0 to 2
Lilium Harrisii, 12 blooms	4	0 to 0	Smilax, bunch ...	2	0 to 3
„ longiflorum, 12 blooms	6	0 to 8	Tulips, bunch ...	0	4 to 0
Lilac, bunch ...	3	0 to 4	Violets doz. bunches ...	0	6 to 1
			„ Parme, bunch ...	2	6 to 3

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0 to 36	Foliage plants, var., each	1	0 to 5
Aspidistra, specimen ...	5	0 to 10	Lilium Harrisii, doz. ...	24	0 to 36
Crotons, doz. ...	18	0 to 24	Lycopodiums, doz. ...	3	0 to 4
Dracæna, var., doz. ...	12	0 to 30	Marguerite Daisy, doz. ...	6	0 to 8
Dracæna viridis, doz. ...	9	0 to 18	Myrtles, doz. ...	6	0 to 9
Erica variegata, doz. ...	9	0 to 24	Palms, in var., each ...	1	0 to 15
Euonymus, var., doz. ...	6	0 to 18	„ specimens ...	21	0 to 63
Evergreens, var., doz. ...	4	0 to 18	Pelargoniums, scarlet, doz.	8	0 to 12
Ferns, var., doz. ...	4	0 to 18	Solanums, doz. ...	6	0 to 12
„ small, 100 ...	4	0 to 8			



THE FRENCH DAIRY INTEREST.

We are so apt to consider the Danes, and the Danes only, as our great rivals in the production of dairy delicacies, that we overlook the other nations who have turned their attention to this particular industry. We must correct ourselves. In southern England, those parts nearest Normandy, there is some knowledge of French enterprise. Of course it is natural that perishable goods should be landed at the nearest port, so we on the east and northern coasts are more conversant with Danish wares than we are with those of "La Belle France."

From early Norman days these two countries, separated by a silver streak, have been more or less antagonistic. We have scoffed at and despised the "Mounseer," and he has made game of "John Bull." First one of us, and then the other, has had the advantage, but, on the whole, affairs have been pretty evenly balanced, and we can neither give each other great odds. Indeed, when we consider how much Norman blood runs in our veins, it is no wonder we are in many things so much alike. Climatic influences bring about the differences, but racially we are in a measure one.

The enterprise of the Frenchman does not stop at butter and cheese, he actually has the audacity to send us over milk; but it is not with his milk exports we are at present concerned, it is more his butter and his cheese. The writer of to-day, a man at home equally on an African "veld" as on a Norfolk pasture, does not give, as an eye witness, the most pleasing accounts of the butter and its surroundings as found in Brittany.

The custom appears there for the butter to be gathered up from all the small farmers (peasant proprietors) and then re-made, worked, and blended in a manufactory. Well, that is not quite our idea of the way to make good butter, but this mixture or manufactured article finds a ready market. We should not like the raw material. The French farmhouses and surroundings (the small ones we mean) are not arranged with much idea as to sanitary matters, and the people themselves are too hard pressed by constant toil to be ultra-particular about the methods employed.

We should prefer that the manufactories began with the milk rather than with the already made up butter; there would be more chance of rudimentary cleanliness at any rate. In northern France we find a good class of cow, very much after the stamp of our Shorthorn, and it is to these northern provinces that we look for butter production. The grass land of Normandy is sound and good, well calculated to produce milk, and also well calculated to produce grand well-developed cart horses. The principal butter districts are the departments of Ille et Vilaine, whence come 18,000,000 lbs. of butter; Nord, touching on Belgium, Pas du Calais, and further west, Calvados and Manche. This butter is sold by the kilogram, equal to 2.2 lbs., and the price varies from 1s. 3d. to 2s. 4d. per kilogram, just about what most English farmers get for theirs. We do not often fall below 7½d. per lb., and do not often exceed 1s. 2d., although we see that for two weeks in August we actually made 1s. 4d., and in October and November 1s. 3d. (This was owing to the prolonged drought, which caused great scarcity of food).

France produces yearly somewhere about 136,000,000 kilograms of butter as against Denmark's 50,000,000, and Italy's 16,500,000. But after all it is not in butter production that France exceeds the other nations—she takes the lead in cheese, and gives us cheeses many and varied. The working classes of France have always been much more frugal than the same class in England. They live more carefully and on a plainer diet, vegetable soups, salads, any bread but wheaten, no beer, and not much meat, not half the luxuries that the British workman demands.

Of all forms of food nothing is much more concentrated than cheese. It may be a little hard of digestion, but when that is accomplished the system is enriched by many valuable constituents. The Englishman does not put cheese quite in its right place, he uses it as a finish to his meal rather than making it the *pièce de résistance*. Cheese is not consumed by the working classes as it used to be. In our young days most farmers made at least a few cheeses to be used

for himself and his men, and now, except in the cheese districts proper, where is the cheese-maker? Gone with the home brewer and bread maker.

Cheese used to be sent out always for afternoon luncheon in harvest, and filled many a gap at other times; now cheap pork pies and cakes take its place. The French are very proficient in soft cheese manufacture—the taste for these goods is certainly growing in England, but slowly. Our dairy teachers are now prepared to show us how to make many varieties of small inexpensive cheeses, but the market is not quite here yet. We stick to our hard varieties, and for a change in summer enjoy a real cream—an expensive luxury only for the few.

Like the hard or pressed cheeses the soft ones can be made either plain or rich. It is simply a question of removing the cream, and for immediate consumption the plain cheeses are most excellent. They are made up into small shapes, easy of purchase, easy to consume, and form a most pleasing variety in the menu. Whether we as a nation shall ever take the matter up seriously remains yet to be proved. France makes £2,500,000 of her hard cheese, but a good deal more of her soft cheese. When the English palate is sufficiently cultivated, perhaps the English farmer will be found ready to put on the market such and similar varieties known abroad as Brie, Loudom, Miers, and Camembert.

WORK ON THE HOME FARM.

Farmers are renowned as grumblers, but the man who would grumble at the present weather must indeed have a soured mind. We had just a sufficiency of frost, though not too much, some nice rain, which has invariably fallen in the night, and so hindered no work, and now we are enjoying bright sunshine and a June temperature.

Barley is being sown under perfect conditions of soil and temperature, and there is now quite the full regulation supply of March dust. Wheat is being rolled and harrowed; some fields are much too thick of plant, and harrowing is necessary for thinning purposes.

Where top-dressing for Wheat is thought necessary it is time the manure was put on. If sulphate of ammonia be used it should be sown immediately without delay, as it is so much slower in its action than nitrate of soda. Nitrate may be sown until the end of April. Salt can be put on the Wheat, and will do good on sandy soils; 4 to 5 cwt. per acre.

Clover seeds may now be sown, and if the land be clean and as free from weed seeds as it ought to be, they had better be sown with the Barley immediately after the corn drill. This is the only sure and certain way of attaining a good plant of seeds.

Farmers who can spare time from the spring sowing are doing a little more to the fallows; we see the smoke of twitch burning in several directions to-day. Thus thousands of little bits will be utterly destroyed which, if left, would have quickly made the land as foul as ever.

Lambing proceeds satisfactorily, and, generally speaking, losses are very small, both ewes and lambs being exceptionally healthy. Young seeds are looking very green and fresh, the Rye grass providing a nice bite for the ewes with pairs, which are now being favoured with the first taste of it. Turnips are nearly done, and the fat hogs are quickly going to market, leaving a poor look-out for the supply of the April fairs.

The beef trade is better, and store beasts are making good prices, good yearlings making up to £9 and £10 each. We see that anthrax is again reported from North Lincolnshire, two farms being affected. This sounds very serious, as one is the second outbreak within a few months, and we should sympathise with the occupiers in what must be a very prolonged time of anxiety.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899.	March.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	12	30.461	50.8	48.0	N.	40.0	58.2	41.1	93.3	35.9	—
Monday	13	30.605	41.1	41.1	N.E.	41.4	57.9	40.1	83.9	32.9	—
Tuesday	14	30.568	38.6	38.2	N.E.	41.2	47.1	31.9	56.7	28.9	—
Wednesday	15	30.478	41.5	40.6	N.E.	39.6	59.9	31.4	87.2	26.9	—
Thursday	16	30.474	34.8	34.8	E.	40.0	45.8	33.9	52.1	27.9	—
Friday	17	30.420	41.3	40.9	E.	40.2	42.9	35.3	45.6	35.1	—
Saturday	18	30.147	42.0	41.4	N.E.	40.1	46.8	30.9	70.6	28.3	—
		30.450	41.4	40.7		40.4	51.2	34.9	69.9	30.8	

12th.—Fair day, with bright sunshine at times.

13th.—Foggy morning, with the sun visible; bright afternoon.

14th.—Fog all day, generally rather dense.

15th.—Fine and sunny day; haze or slight fog in morning.

16th.—Overcast all day; wet fog early and most of the morning.

17th.—Smoke fog nearly all day, and lights necessary, but clearing towards sunset.

18th.—Overcast, with occasional drizzle in morning; fine, and frequently sunny, after noon.

Fogs early, much bright sun, no rain, and temperature near the average.—G. J. SYMONS.

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APRIL 12th.—At the Spring Show of the ROYAL BOTANIC SOCIETY, Regent's Park, London.

APRIL 13th & 14th.—At the Daffodil Show of the MIDLAND DAFFODIL SOCIETY, Birmingham.

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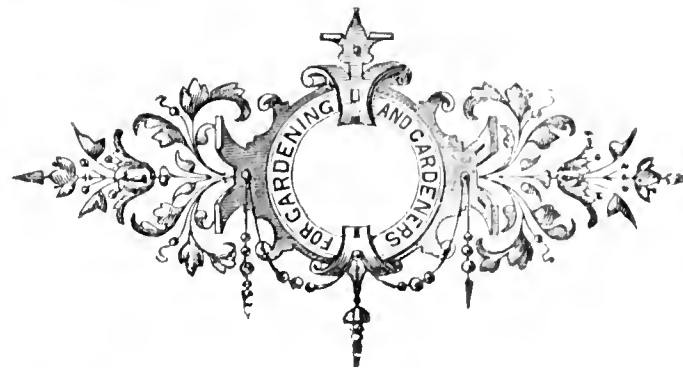
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Journal of Horticulture.

THURSDAY, MARCH 30, 1899.

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THE FLOWING TIDE.

WHO has not stood by the seashore which surrounds our island home, and watched the waters of the mighty ocean swelling and pressing onward as the tide comes in? Its movements are as fickle and erratic as the weather of an April day; sometimes the surface of the waters shows but little movement beyond the natural swell of the flowing waves, at others the waves run high, the surf is dashed in fitful fury in all directions, and the roar of rushing waters inspires us with feelings of awe for the power and grandeur of our land's defender. Yet through all these changes the course is onward, ever onward till full tide is reached.

How great may be the simile between our own lives and the ocean's daily movements of flowing and ebbing tides. As the gardener passes through the various seasons of the year, each bring their pleasures and their difficulties; sometimes the latter are as pronounced and sudden as the rushing waters of the ocean, and need the grit of the true British Oak to withstand their force, yet the course is plain—onward, still onward, till the goal is reached. A goal that brings pleasure with it, in the consciousness of good work accomplished, and a good fight won.

With the advent of spring begins the flowing tide of the gardener's year, and in proportion, as opportunities are grasped as they arise, will the varying degrees of success be achieved. From the beginning of the year till now the chief signs of activity in vegetable life have been confined to the inmates of glass structures; but all nature is now awaking in the open air, and each day brings with it fresh evidences of the return of spring, even though winter may obstruct it sternly. Fruit trees on walls are in many places already in flower, in others they are ready to unfold their buds; if left to themselves one night's frost may ruin the prospect of success, and provide cause for lamentation for the whole year. Those who are fortunate in having plenty of canvas or tiffany in readiness may, by the aid of a few poles placed against the walls, soon make the flowers secure from frost,

even when the expense of coping boards and pulleys is not incurred, though the latter arrangement is preferable on account of the ease with which the coverings may be drawn up or lowered as required. Unfortunately, however, in many cases the necessary materials are not provided in time to be effectual.

After a sharp frost it is a good plan to let the trees remain covered till near noon, when they are in position which the sun catches early in the morning, as many instances might be recorded in which both plants and fruit blossom have, after being slightly frozen, been saved from ruin through warding off the sun's rays. It is not always the frost alone which does the damage, it is the rapid change from cold to heat which causes scald. Spruce boughs or fronds of bracken fastened over trees in flower in cases of emergency will often prevent disaster, and a plentiful supply of these materials are useful for many purposes in spring.

We may, perhaps, some day find out a way of protecting fruit trees in open quarters from the devastating effects of frost which occur while they are in flower. When we do there will be a good time in store for the British fruit grower. The resourceful Americans seem to be stealing a march upon us in this respect, for they have long been trying experiments in that direction. Their plan of procedure is to light fires in their orchards during the evening when sharp frosts are expected.

The fires are made of green brushwood and other rubbish which burn slowly, and they claim to be able to arrest the lowering of the temperature of the air around their fruit trees by several degrees, through checking radiation by the cloud of smoke, which is also provided in the morning to prevent the injurious effect of sunshine after frost. This seems at least to be a plucky attempt at grasping an opportunity. I wonder if any British fruit grower has tried the plan? It was, I believe, borrowed from continental Vine growers.

Turning to the kitchen garden we find hosts of important matters requiring attention while the conditions are favourable for the work. The land is in that beautifully dry crumbling condition so favourable to seed sowing. Onions and Parsnips should have been sown several weeks ago; if not done the work ought to be attended to at once, though in the case of Onions such late sowing paves the way for a bad attack of maggot, as the young plants do not have time to grow out of the critical stage before the egg-laying flies are hatched out. It is true they cannot always do so, but it is wise to give them a chance.

Successional Peas, Beans, and Spinach will also need sowing, and the main crop of Carrots. Where there are warm sunny borders, early stocks of Lettuce, Cabbage, and Cauliflower will be making good progress if the soil is kept frequently stirred during sunny days, and other sowing need be made in similar position. Cauliflowers planted in open quarters should be set in drills, and have refuse placed around them for protection; if these are allowed to remain till the present spell of cold nights has passed, removing them when the weather is open, it is surprising how little a few degrees of frost will affect them. Slight protection where possible seems to be the golden rule to observe with so many spring crops in our treacherous climate. There is also the great work of Potato planting. Many early ones have already been "committed" to the soil, and will perhaps later on feel the keen touch of a May frost; but it is always a good plan to plant some of the early varieties at the end of March or early in April, and throughout the latter month every opportunity should be taken to plant both midseason and late kinds till the whole of such work has been completed.

To lay a sure foundation upon which to rear success in vegetable culture, the autumn and winter work of deep digging must be practised, but it is not less important that work should be kept well in hand during the spring; and while taking advantage of favourable opportunities for sowing and planting, the frequent stirring of the soil to let in warmth and keep weeds in check, must not be neglected, if the tide of spring promise is to flow onward to a bountiful harvest.—ONWARD.



LÆLIO-CATTLEYA ERNESTI PRINCESS OLGA.

At one or two of the more recent meetings of the Royal Horticultural Society, Mons. Ch. Maron of Brunoy, France, has been represented by some superb hybrid Orchids, and on February 28th amongst others exhibited was *Lælio-Cattleya Ernesti Princess Olga*, which is admirably depicted in the woodcut, fig. 61. This bigeneric hybrid came from a cross between *Lælia flava* and *Cattleya Percivaliana*, and is of exceptional beauty. In form, substance, and colour it is well nigh perfect, and every visitor to the Drill Hall was charmed with this superb addition to the Orchid family. The colour is a rich yellow with a deeper suffusion in the sepals and petals, the latter being comparatively broad and wavy at the margins. The splendid lip is crimson, paler at the edges. The Orchid Committee recommended a first-class certificate to the plant, which we understand passed immediately to the collection of Mr. Norman C. Cookson.

LÆLIA FLAVA.

THIS little Brazilian species, although not so showy as some of the larger *Lælias*, is well worthy a place in any collection, on account of its clear, shining, yellow colour. To the hybridist it has proved invaluable, as by its aid such valuable hybrids as *L.-C. Princess Olga* and *L.-C. Myra* have been raised. The former is a hybrid between *Cattleya Percivaliana* and this species, and the latter a cross with *Cattleya Trianae*. It succeeds under the same conditions as *L. cinnabarina*, which it resembles, only it is much smaller, therefore should be hung close to the glass in the intermediate house.

LÆLIO-CATTLEYA BELLA.

This beautiful hybrid is now in flower, and although one of the first to be raised by Mr. J. Seden it is still one of the most charming, but, unfortunately, is still very scarce. It is a cross between *Lælia purpurata* and the old stock of *Cattleya labiata*. The flowers are large, quite 10 inches across, the sepals and very broad petals being of a rosy lilac colour, and the lip over 2 inches across, with a broad anterior wavy lobe of rich purple or lake, with a lighter purple disc. The colour is white, tinged with rosy purple at the side, and at the mouth of the tubular portion of the lip are two oblong zones of yellowish white, and in front of them two spots of the same colour. This, like many other fine hybrids, was first flowered in the collection of Baron Schröder, The Dell, Staines. The treatment given *Lælia purpurata* will answer its requirements admirably.

BULBOPHYLLUM BARBIFERUM.

This curious and interesting plant is again pushing its fascinating flower spikes, and to the lover of botanical curiosities will be of great interest. I have found it succeed in the warmest house the whole year, with a good supply of water during active growth, and a reduced quantity when at rest. It will succeed in the ordinary Orchid compost, in small pans or baskets suspended close to the glass. It comes from Sierra Leone, and is well grown by Mr. White, who has charge of Sir Trevor Lawrence's collection at Dorking.

DENDROBIUM RUBENS GRANDIFLORUM.

This, one of the best of the *D. Lecchianum* and *D. nobile nobiliss* crosses, was raised by Mr. J. Cypher of Cheltenham. It is a very fine flower, being nearly 4 inches across, and the petals almost 1 inch in width, of a peculiar rosy purplish crimson. The finely feathered lip is extremely beautiful, and the plant is a worthy companion to *D. n. nobiliss*.—J. BARKER, *Hessle*.

LÆLIA DIGBYANA HYBRIDS.

THE set of hybrids raised from *Lælia (Brassavola) Digbyana* and sundry of the *labiata* *Cattleyas* are very beautiful plants, each showing the delicately fringed lip of *L. Digbyana*, more or less delightfully tinted. The first of these appeared some ten or twelve years ago, and is the result of a cross effected by Mr. Seden in Messrs. Veitch's nursery, the other parent being *Cattleya Mossiae*. The pseudo-bulb and leaves are most like those of the *Lælia* parent, but without the peculiar grey tinge; the flowers are large and very handsome, the sepals and petals are a pretty soft rose tint, the latter much broader than the former.

The lip is a beautiful feature, broad and massive, the outer portion and the fringe a little lighter in colour than the sepals and petals, but having more or less of a deep crimson streak in the open portion. There is then a large white central area leading to the golden yellow throat, from which lines of an old gold tint lead to the under side of the column. The parentage of the other *Lælio-Cattleyas* raised being

very similar to this one, the description generally tallies with them, but there are differences, as will be noted. The next on the list was also raised by the same successful hybridist, who in this instance used *C. Trianae* as the seed parent.

L. Digbyano-Trianae was exhibited before the Royal Horticultural Society in 1897, when a first-class certificate was deservedly awarded by the Orchid Committee. This is an even more beautiful plant than the last, having more colour, though of course its general characteristics are similar. Then in April of last year Messrs. Veitch exhibited a third, *L. Thorntonii*, though this pretty plant was not raised in the first instance in their nursery, but by T. W. Thornton, Esq., after whom it was named. It is not equal to any of the preceding, still a lovely plant, its second parent being the summer-flowering *Cattleya Gaskelliana*. The fringed lip is again beautifully reproduced, but the colour is less bright.

A very beautiful plant is *Laelia Digbyano-purpurata*, the parentage being represented in the name. This, though showing its affinity to *L. Digbyana*, has not the same delightful appearance as the rest, the influence of the strong-growing *Laelia* being apparently too much for the weaker one. In shape it resembles *L. purpurata*, and the lip is light purple in front with a very narrow fringe only. And now the latest addition is from quite a different source, having been exhibited at the Drill Hall on March 14th by Mons. Chas. Maron of Brunoy, France. The beautiful *C. Mendeli* has been used here in conjunction with *Laelia Digbyana*, and very pleasing indeed is the result.

The radiating lines of yellow so prominent in *C. Mendeli* are reproduced, and there is something about the white frilling at the upper part of the lip that reminds one of this fine species. A great many other species have been used as seed parents, and in more than one large establishment seedlings in various stages of development can be seen. Of these, of course nothing can as yet be said, but the present day custom of using only the finest types of each species for hybridising purposes will have its effect, and we may look forward to their flowering with interest at least, and a considerable amount of confidence.

DENDROBIUM WIGANÆ.

This is one of the finest of hybrid *Dendrobiums*, and a lovely form of it was that shown at the Drill Hall on March 14th by Sir Trevor Lawrence. Many of the forms recently flowered have shown a certain amount of yellow in the ground colour, but none that I have seen have been so fine as this chaste form, which was named *D. W. xanthochilum*. A remarkable point about this hybrid is that it was raised by Sir F. Wigan, Sir Trevor Lawrence, and by Messrs. Veitch & Sons, Ltd., at, or about the same time, and it is to the credit of all concerned that it was only once named. It is the result of crossing *D. nobile* and *D. signatum*, and first flowered in 1896.

ANGRÆCUM CITRATUM.

Though very small in comparison with such giants as *A. eburneum* and *A. sesquipedale*, this is a very pretty and chaste plant. It takes its name from the colour of its flowers, which when growing in a state of nature are pale citron yellow, so we are told. Under cultivation this colour wholly disappears, or at most is only a cloudy white. Looking at a number of plants of it in full flower recently, I could not find a trace of yellow on the sepals or petals, so the name is rather misleading. The racemes are often 18 inches or more in length, so make a pretty show when in flower.

The culture of *A. citratum* is not difficult when plenty of heat and atmospheric moisture is at command. Being of small stature the plants are not at home in large roomy receptacles; they like being pinched as it were for room, and the best thing to use is the small wire baskets about 4 inches across for single-stemmed plants. Two or three large lumps of charcoal may be placed in the bottom of each, and a little more mixed with clean freshly gathered sphagnum moss for compost. Fix the plants firmly, using a few strands of matting if necessary, though this will be seldom. Water must be freely given all the year round, and light sprayings overhead serve to keep the plants healthy and free of insects. It is a native of Madagascar, discovered there early in the present century by M. du Petit Thouars.

A NOTE ON DENDROBIUMS.

There are few more popular genera of Orchids than *Dendrobium*, and none more beautiful. If a grower were tied to one house of Orchids, those to be of one genus, he would probably get more beautiful plants and more variety out of it by growing them than by growing any other. The lovely golden tint of the evergreen kinds, like *D. densiflorum* and others; the showy hybrids raised from our old friend *D. nobile*, *D. aureum*, and many others; the lovely *D. phalaenopsis*, and others of the New Guinea kinds, to say nothing of the most popular class of all the long-stemmed deciduous groups, of which *D. Devonianum*, *D. Pierardi*, and *D. Wardianum* are well-known examples. Of quaint and fanciful forms there are plenty, such, for instance, as *D. taurinum*, *D. stratiotes*, and others, and although they lack to some extent the grace and elegance of the deciduous kinds, there are chaste and fine flowers among the nigro-hirsute groups.—H. R. R.

FARM ORCHARDS—IMPORTS AND PRICES OF APPLES.

WE take the following extract from a paper read at a farmers' club by Mr. Spencer U. Pickering, F.R.S., Director of the Duke of Bedford's Experimental Fruit Farm at Woburn. As might be expected, the paper, which was read by Mr. Pickering at a recent meeting of the Royal Horticultural Society, was of a different character, and from what we hear, it appears to have been too scientific to meet the approval of some of the audience. However that may be, there is evidently a practical side in the mind of the scientist, for this is what he said to the farmers:—

"I am not aware of the conditions under which the old farm orchards were originally planted, but the conditions under which they are now generally renewed are the most unfavourable which could be devised. To plant a young tree in ground which is probably exhausted by having supported a similar crop for a century or more, in ground still being drained of whatever good it contains by the spreading roots of large neighbouring trees, is, to say the least, unfair treatment. In addition to this, dead wood, both above and below the surface, abounds, and affords a supply of every parasite which is likely to injure a tree,

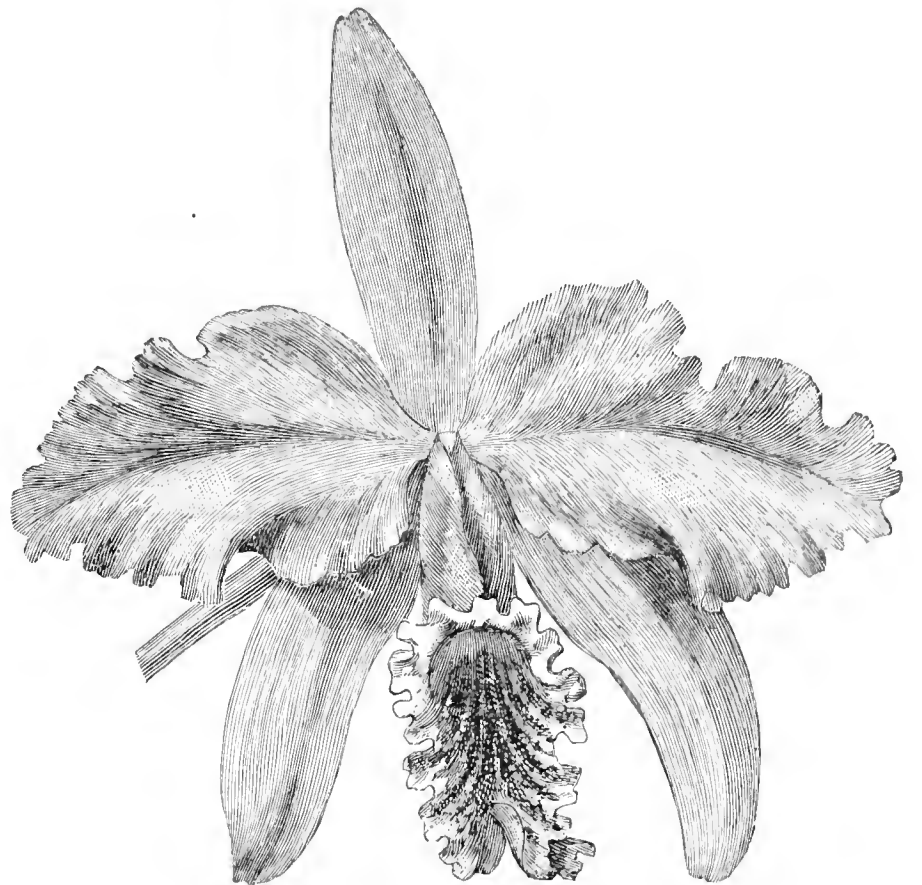


FIG. 61.—LÆLIO-CATTELEYA ERNESTI PRINCESS OLGA.

and the young trees can rarely obtain a proper supply of light and air through the network of branches of the older ones; while, even if properly secured to stakes and sufficiently protected from the onslaught of the farm stock, the trees too often come to grief through the fall of rotten branches from their old neighbours.

"When advocating a little more attention to orchards we are always met with the stock objections of low prices, foreign competition, and high railway rates; these are, I fear, generally urged rather as excuses for not making exertions, than as valid reasons against fruit-growing. In the case of soft fruits there certainly are occasional gluts, when it does not pay to gather or market ordinary orchard produce, but with Apples, good fruit of good varieties, when properly marketed, will always pay for carriage and yield a good return. I need only quote my own experience in Bedfordshire. In years of plenty Apples are hawked about the country at 1s. 6d. to 1s. a bushel, having been obtained from farm orchards where the grower probably did not receive more than a quarter of these prices for them; yet at the same time we can send properly grown Apples to Covent Garden and obtain a return of 4s. to 8s. per bushel, sufficient to pay carriage and all other charges, leaving a substantial profit for the grower. Foreign competition scarcely affects soft fruits at all at present, and with the hardier fruits its effects are but small, owing to the bulk of such fruit arriving in the market after the English fruit has for the most part been disposed of.

"The enormous quantities of Apples which are now imported into England from abroad have, so far as I can ascertain, had but little effect on the average prices realised. The public taste for fruit seems to be eminently capable of cultivation, and the market for fruit is consequently a very expansive one. I have attempted to obtain accurate statistics as to the amount of the importations and the

average prices during the last twenty or thirty years, and also data showing the amount of land under fruit in England throughout this same period—which latter would show how far this increased demand has been responded to by English growers—but without success, and I fear that such data as have been collected are not applicable for this purpose.* The annual importation of market Apples, however, during the last ten years amounts to from three to six million bushels, and is probably equal to or greater than the total amount of English-grown Apples marketed thirty years.

"There is no doubt that we have lost markets which might have been captured, and are likely to lose others, which are at present scarcely affected by foreign competition. For this, I fear, we have only ourselves to blame. It is in the fruit trade, as in almost every other, our want of adaptation to the requirements of customers, and our obstinate adherence to traditional practices, however antiquated, which lead us to be ousted by the more observant and painstaking foreigner. The careless way in which English fruit is generally picked and handled before it is sent to market is sufficient to prevent it from ever realising high-class prices, and the niceties of grading and packing it, so that it may not only travel without damage but present a tempting appearance to the purchaser, are almost wholly unknown to English farmers. It is lamentable to walk through Covent Garden Market and see the prices asked for foreign Apples and Pears, and compare them with those fetched by the generality of English produce, especially when we know that—as regards the former at any rate—we can produce fruit equalling, if not excelling, any foreign produce, both in quality and appearance, while we have all the advantages of short distances to the market."

But here come the causes—the complaint against the railway rates, which are "no doubt capable of improvement in favour of the grower; but those who inveigh most strongly against them, and contrast the rates paid for sending English produce a short distance with those paid for foreign produce, are apt to forget that small packages of fruit sent occasionally cannot possibly receive such favourable treatment as large and regular consignments. Cases have also come under my knowledge of railway companies having taken the initiative in trying to induce farmers to adopt some sort of co-operation for placing goods on their line in bulk, so as to secure lower rates, and I may notice the instance of the Great Eastern Railway Company taking the initiative in helping small producers by supplying wooden boxes at a cost less than that at which they could be made, except in a large quantity. I am glad to learn, through the courtesy of the Company, that this step seems to have been appreciated to a marked extent, and that the annual sale of these boxes now reaches nearly 130,000."

THE BEST PEACHES.

THE variety Dymond I have never grown under glass, but have invariably found it excellent on the open walls. It bears well, and the fruits are large, handsome, and of the best quality. Waterloo has proved the best of the earlies, Early York and Hale's Early following with Dymond and the midseason varieties, then Gladstone, Sea Eagle, and Princess of Wales as the latest. With regard to flavour, much depends on the management of trees and the way they are cropped. It is my practice, and has been for some years, not to crop merely for quantity; fewer fruits, larger in size, and better in flavour, should ever be kept in view.

As yet I am at a loss to know the real cause of Peach trees when early forced shedding a portion of their buds. Even when the golden rules are strictly adhered to the buds will drop more or less. We have been told that lifting the roots and relaying them in fresh soil nearer the surface will in a great measure prevent the malady. One does not dispute this, but if the borders have been properly made, the compost suitable and sweet, the depth 2½ feet, surely the roots should be safe and right for some few years and require no disturbing. Then we are told if the trees be subjected to too high a temperature when starting them into growth the buds will fall, and so they will at times, no matter how careful you are and have been, which satisfies me that the mischief is done before the starting time. Goshawk I must not omit to mention, as it is a first-class Peach.—H. MARKHAM, *Wrotham Park, Barnet.*

* "Since the above was written I have received, through the courtesy of Major Craigie, of the Board of Agriculture, a collection of data relating to the amount and value of imported fruits, from which I have drawn the following summary as regards Apples:

	Bushels imported.	Value.	Value per bushel.
1883—1890 inclusive.....	22,509,195	£6,268,585	5s. 8d.
1891—1898	33,218,561	9,457,891	5s. 8½d.

"Thus, when these two periods of eight years are compared with each other, we find that the imports have increased by 50 per cent. without appreciably affecting the value per bushel. At the same time, however, I must remark that these data are deserving of a more careful analysis than it is possible to give them here, and that any general conclusions drawn from them without such an analysis should be accepted with some reservation, especially as the 'values' are those declared by the consigners, and not the prices realised in the market.



KINGSTON CHRYSANTHEMUM SOCIETY.

At a meeting of the Committee of this Society, held on Friday evening last, to revise the schedule for the next November show, the Chairman, Mr. W. Drewett, was enabled to announce that Sir J. Whittaker Ellis, High Sheriff of Surrey, not only had consented to become the President for the year, but would also, for himself and Lady Ellis, offer a prize of 5 guineas. It was later agreed to make this sum the first prize in the miscellaneous group of plants class, and should help to create severe competition. Arising out of what took place last year, the Committee agreed to bar from the class all such accessories as cork and mirrors. It was also agreed to introduce a dinner table class for lady amateurs. The champion class now to be for thirty-six Japanese, distinct, instead of the old cup class for Japanese and incurved, entrance into which was a costly item, will now be open to all at one-half the previous charge. It was further agreed to retain the old "incurved" classes, but practically leaving to exhibitors their own interpretation of the term, quality still being the leading element, and also to introduce a class for recognised incurved Japanese, and a similar one for Japanese reflexed, in the hope that these may help to arouse greater interest in the Show. The Committee fully realised that constant repetition of the stereotyped classes leads to monotony and to stagnation. It is hoped, therefore, that the introduction of new features will in this way help to arouse new interest in the Society's exhibitions.

EUCHARIS AMAZONICA.

HAVING read the *Journal of Horticulture* for twenty-five years I must admit nothing gives me greater pleasure than to see a few lines appear respecting the cultivation of this plant. I am at one with Mr. J. Shalford in his able article on page 162. What with loam, leaf mould, decayed manure, sand, soot, paraffin and water combined with consideration, we are as strongly fortified as the "mite" itself. To follow the method Mr. Shalford adopts will, I think, put us in a fair way to do just as we please in respect to flowering the *Eucharis* at any season of the year. I have had to do with the *Eucharis* plant a few years longer than I have had with the *Journal*, but still I read the *Journal* first and attend to the *Eucharis* plants as soon as possible afterwards, as by so doing I think I am more likely to steer clear—by the valuable hints now and again thrown—of the dreaded mite.

The present time, perhaps, is opportune for me to give an account of the only *Eucharis* plant under my charge at present. I may say that when I took charge of these gardens a little over two years ago I found at one end of a span-roofed house a pot about 8 inches in diameter, over the sides of which were hanging a few dead leaves. I could see it was nothing more than a pot of *Eucharis* in trouble, so determined to kill or cure. I procured an old round-mouthed shovel, which I took to the field, dug a turf, and placed it on the fire till it was nearly red hot. I next went to where a fire had been burning a few days previously and secured some charred ashes, then some sand and soot, all of which were thoroughly mixed. It was very dry, so I took a two-gallon canful of water, into which I put two wineglassfuls of paraffin, and watered the compost through a rose until in a fit condition for potting.

Then the supposed dead plant was fetched, knocked out of its pot, and eight or nine bulbs, minus of roots, were disclosed. I examined them through my glass, and could see a number of very small white grubs. I placed them in a rather strong solution of paraffin and water for ten minutes, and afterwards in pure water for the same time. They were then put in a 10-inch pot, with the result that growth soon commenced, and at the present time I am pleased to tell you the plant is looking the picture of health, carries splendid foliage, and is promising to give a good display of bloom in the coming season. As I adopt Mr. Shalford's culture with the exception, perhaps, of one or two instances, such as watering at the roots with paraffin and soot water, also syringing over the foliage with this mixture, I think success is bound to follow. To my mind nothing is more pleasing to the gardener than to see the beautiful spikes rising from this plant, as the blooms are so valuable.

And now I would speak a word about a good *Eucharis* grower. On April 23rd, 1885, page 337, are some notes from my pen, and the plants then referred to have been seen many times since, as also has the grower, who looks almost as well as his plants. However, I must be content to say that at Cardiff Castle Gardens there are six of the finest plants of *Eucharis* I ever had the pleasure to see. I once happened to just catch them at their best, and they put me very much in mind of a snowstorm when the sun was shining. The plants were monsters, and I require no further proof that Mr. Pettigrew is a thorough master in the art of *Eucharis* culture.—H. MITCHELL, *Druidstone.*



RECENT WEATHER IN LONDON.—Several cold and heavy showers fell on Saturday afternoon and evening. Sunday was bright and fine with cold north and north-east winds. Since Monday it has been brilliantly fine and distinctly milder.

— WEATHER IN THE NORTH.—The past week has been one of wintry rigour. Beginning on the 19th with 6° frost, the 24th showed 14°, the cold intensifying daily. A slight shower of snow fell in the afternoon of that day; Saturday brought a heavy fall of fully 5 inches. Thaw set in on the afternoon, and continued with steady drizzle all Sunday. Monday afternoon was fine, and a west wind rapidly cleared off the snow. Greater depth of snow and harder frost are reported from several districts. —B. D., *S. Perthshire*.

— HESSLE GARDENERS' SOCIETY.—Mr. G. Wilson, Swanland Manor, read a paper before a moderately attended meeting of the above Society on Tuesday, the 21st inst., on "Cottage Gardens and Allotments." Mr. F. Mason presided in his usual manner, and the ensuing discussion was entered into by Mr. G. Picker, Hesslewood; Mr. Barker, West Hill; and several other members. The usual votes of thanks to the essayist and the Chairman brought a pleasant evening to a close. —J. T. B., *Hessle*.

— APPLE NEWTON WONDER.—This is the age of novelties and new introductions, and when any flower, fruit, or vegetable possesses high quality it is not long in becoming universally popular. Newton Wonder is not an old Apple, neither can it now be called a novelty, but so good are its qualities that in a comparatively short time it has secured a place in the forefront of popular Apples. The market grower has found out its worth, and Newton Wonder is now represented in many plantations, so that in a few years' time we may expect to find it among those sorts which are sent to market in bulky quantities. The other day I was shown a sample of Newton Wonder which had been grown in a Kentish plantation. Though late in the season for Apples, the fruits were firm and sound, large, and highly coloured; proving that not only does this variety succeed well in the south, but that it is one of the sorts capable in every way of competing with foreign produce. —V. T.

— A PERSISTENT PEA ENEMY.—In his interesting notes on Peas (page 211) Mr. Shalford makes reference to the damage done by the mischievous sparrow when the crop is nearing perfection. There is a worse pest among the feathered tribe than the sparrow, and lucky are those growers who have never been troubled with it. I refer to the hawfinch, a beautiful bird of the bullfinch type, which seems to be confined to certain localities. It is not the leaves that the hawfinch seeks, but the peas themselves, and its short thick strong beak might have been intended by Nature for the express purpose of shelling Peas. In localities where hawfinches abound they will frequently make a set at a row of Peas just when ready for picking, and if not checked at once they will soon clear the row. Their impudence is only surpassed by the sparrow, and they soon get used to anything in the shape of scares. The gun seems to be the only efficient means of checking their depredations in districts where they abound. —H.

— CAMELLIAS MATHOTIANA AND MATHOTIANA ALBA.—There can be no question as to the superiority of these two varieties, more especially the latter, which it is to be regretted is comparatively little grown in this country. It is said that it is somewhat difficult to cultivate, consequently that may be one reason as to its rarity. Such a reason, however, would seem to be illusory, if the two fine and flourishing examples I noticed a short time ago growing in the grand long corridor attached to the range of Orchid and other houses at Whetstone, Edgbaston, the residence of G. H. Kenrick, Esq. They were both profusely in flower, and the fair glossy foliage and substantial, deep, and creamy white petals of the latter were most attractive, forming also a distinct and pleasing contrast to the pure white colour of an adjacent fine specimen of *C. alba plena*. It may also be observed that about a score of similar fine specimens of other kinds of Camellias ranged along the whole length of the corridor in question present, either in bloom or otherwise, a pleasing effectiveness, and they reflect much credit upon Mr. J. V. MacDonald, the expert head gardener. —W. G.

— MINIATURE ZINNIAS.—Everyone who has had experience with these charming flowers—and what gardener has not?—will readily endorse all that "R. J." says on page 215 about their beauty, usefulness, and ease with which they may be grown. The writer of the article made no reference to classification, and perhaps the majority of Zinnia growers confine themselves to the tall growing section. I notice, however, that a new departure has been made in favour of dwarf Zinnias, and some seedsmen are offering them under the name given in the title. It is stated that the habit is dwarf, sturdy, and compact, and the flowers comprise such colours as white, crimson, scarlet, purple, and yellow. Such being the case, doubtless the miniature Zinnia will prove valuable for planting in positions not suitable for the taller growing kinds. —G.

— SWEET ALYSSUM.—Simplest of flowers! How often is its usefulness overlooked for bedding purposes? For forming edges, growing in clumps, mixing with scarlet "Geraniums," and a score other uses *Alyssum maritimum* is well worth its place. The pretty white flowers, produced in great profusion, are very pleasing, as also is the graceful habit of the plant. A packet of seeds will produce a stock of plants, and I have found the propagation from cuttings a good way of providing for the future. My practice is to raise a quantity of young plants from cuttings in small boxes in the summer. These are placed on a shelf in a cool house during the winter, and the following spring they provide ample cuttings for bedding later on. Plants raised from cuttings I find flower more freely, and do not grow so robustly as those grown from seeds. Sweet Alyssum is among the most accommodating of plants, and succeeds well in positions unsuitable for others of a more tender character. —H. R.

— THE CHELSEA BOTANIC GARDENS.—It is announced that the trustees of the London Parochial Charities have come to the rescue and saved the "Physic Garden" from the ruthless hands of the builder. They have agreed to devote a sum of £800 yearly for its maintenance, which the Apothecaries could not afford. Under the new scheme the garden is to be administered by a representative Committee exclusively for the promotion of the study of botany, with especial reference to the requirements of general education. Earl Cadogan represents Sir Hans Sloane, who conveyed the garden in 1722 to the Apothecaries' Company in trust for the purpose specified. The Garden was, however, founded in 1673, and the manor was purchased by Sir Hans Sloane, who gave the site, a freehold of 4 acres, to the Company on the conditions that they should pay £5 a year for it, and that the demonstrator of the Company should in their name deliver annually fifty new species of plants to the Royal Society until the number amounted to 2000. The presentation of plants continued until 1773, when 2500 species had been contributed. The first great Curator of the Garden was the celebrated Philip Miller, the last the diligent and respected Thomas Moore.

— PRESENTATION TO MR. THOS. TURTON.—When it became known that Mr. Turton was leaving Maiden Erleigh to go to The Gardens at Sherborne Castle, Dorset, a feeling was manifested amongst his numerous friends that the occasion presented itself to show the high esteem and regard in which he was held. With this object in view a Committee was at once formed, with Mr. J. Woolford as Chairman, Mr. J. Pound, jun., Hon. Secretary, and Mr. Jas. Martin, Hon. Treasurer, and the result of their labours was shown on the 22nd inst., when Mr. and Mrs. Turton met a few of the Committee in the committee room of the Abbey Hall to receive from the hands of Mr. C. B. Stevens (the President of the Gardeners' Mutual Improvement Association), the presents set forth in the following address:—"Your numerous friends join in offering their hearty congratulation on your important appointment to the position of head gardener at Sherborne Castle. At the same time they are conscious of the great loss the Reading District will sustain by your departure from Maiden Erleigh. In the prominent position you have occupied as Chairman of the Reading Gardeners' Association and as a member of the Committees of the Reading Horticultural and Reading Chrysanthemum Societies, horticulturists have had the benefit of your knowledge and wide experience. Especially do the younger men feel indebted to you for wise guidance and assistance on numerous occasions. It has been felt that your departure cannot be permitted without an expression of the high regard entertained for you as a successful exhibitor, a generous comrade and a true friend, and you are now asked to accept the accompanying gold watch and chain with a purse of money as a token of good-will and esteem from those friends whose names are hereafter appended. We also beg Mrs. Turton's acceptance of a tea and coffee service. We again heartily wish you continued success in your new sphere of labour." There were upwards of one hundred subscribers to the testimonial, which was highly appreciated by the recipients.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.	
		At 9 A.M.		Day.	Night.	Rain.	At 1-ft. deep.	At 2-ft. deep.		At 4-ft. deep.
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
March.										
		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Sunday ..19	N.	35.8	33.2	40.8	28.8	—	38.9	41.7	43.8	19.4
Monday ..20	N.W.	34.3	32.0	39.7	27.8	—	38.4	41.5	43.8	22.3
Tuesday 21	N.N.W.	32.6	30.5	37.2	19.5	0.03	37.5	41.1	43.8	11.7
Wed'sday 22	N.W.	34.0	29.4	41.2	23.5	—	36.6	40.5	43.8	16.4
Thursday 23	N.N.W.	30.1	27.9	37.1	23.8	—	36.4	40.2	43.5	15.5
Friday ..24	W.N.W.	36.6	32.0	40.6	24.9	—	35.6	39.7	43.4	16.3
Saturday 25	S.W.	41.9	35.6	48.1	20.6	0.17	35.5	39.3	43.1	11.6
MEANS ..		35.0	31.5	40.7	24.1	Total 0.20	37.0	40.6	43.6	16.2

The week has been very cold, with strong north-westerly winds; snow fell on the 21st, and rain on the 25th.

— **SEVERE FROST AT WOBURN FRUIT FARM.**—At the lowest part of the farm we registered an extremely low temperature this morning (March 22nd), which is fortunately a rare experience at this time of year. A severe frost yesterday was followed by a snowstorm of about two hours' duration, and the temperature began falling rapidly shortly afterwards. The air was very still and clear, and this morning a tested radiation thermometer on the ground registered, minus 2.8° Fahr., nearly 3° below zero. The buds of Gooseberries are very advanced, and are likely to suffer. Pear flower buds are also forward, but not open, and the same remark applies to Plums, while Apples are in a quite safe condition. The elevation above sea level is about 260 feet, and the position of the thermometer is near a running brook.—R. L. CASTLE, *Woburn Experimental Fruit Farm, Beds.*

— **THE WEATHER AND FRUIT PROSPECTS.**—During the past week the weather has been of a very wintery character. On several nights the temperature has been very low. On the 21st 19° of frost were registered. In the afternoon a heavy snowstorm passed over, and in the short space of an hour upwards of 4 inches fell, followed by 19° of frost. The trees and shrubs were wreathed with snow, and the landscape had more the appearance of midwinter than spring. Under the circumstances the snow was beneficial as a protector of the crops, but fears are entertained that Peaches, Nectarines, and Apricots on unprotected walls have suffered a good deal, though most kinds of hardy fruit blossom is in a backward state, except a few Pears. Large breadths of Potatoes have been planted in the neighbourhood of Sandy. For several nights the frost has been so severe that for a time most kinds of outdoor gardening was at a standstill.—G. R. ALLIS, *Old Warden Park, Beds.*

— **MARCH FROSTS.**—Everyone interested in fruit culture will look forward with deep anxiety to hear of what effect, if any, of a disastrous kind has been exercised on fruit buds and the all too early blossom by the recent severe, and, for March generally, intense frosts. Were we to judge of what the effect has been by what is seen on the expanded blossom of Almond, we should assume that the harm done has been great. But there is wide distinction between what is seen on expanded blossom and on that which is yet so far sheltered by bud scales and undeveloped. But whilst the intense frosts have been for us in March somewhat unusual visitations, we may be assured that they are far from being such in North America; and if there the blossom eventually opens quite unharmed, why not ours here also? There has been, too, in our favour unwonted dryness, both of air and of soil; indeed, in reference to the former, we seem to have had conditions very much resembling those of North America, and dryness of the air does very much to mitigate the effects of the frost. Then, in spite of the saturation the soil received through the earlier part of the winter, it is now generally very dry. That, again, is an important factor in the matter, and it has much to do in creating so dry an atmosphere. No doubt the organs of fertility in fruit, the flowers, so sheltered in the undeveloped buds will endure much frost, because, as we all know, the chief harm is done when pollen grains, pistil, and ovary are in expanded flowers first exposed to moisture and then to sharp frosts. If any bloom has suffered, probably it will have been the expanded flowers on precocious wall trees, but even with these it often happens, that whilst open blossom is killed, unopened flowers escape. So far, however, all is conjecture; well may we hope that any harm done may be of the smallest.—ALEX. DEAN.

— **THE RAISER OF ERICAS WILLMOREI AND HYEMALIS.**—Mr Willmore's gardener, the late Mr. Williams, Harborne Road, Edgbaston, instead of, as stated on page 214, Miss Willmore's gardener at Strawberry Vale, was the reputed raiser of the Heaths in question—excepting, however, that there appears to be a doubt as to the real origin of *E. hyemalis*.—W. G.

— **READING GARDENERS' ASSOCIATION.**—At the fortnightly meeting of this Association on Monday evening last "The Arrangements of Hardy Plants in the Garden" was the subject of a lecture given by Mr. A. Wright of Falkland Park, South Norwood, when Mr. C. B. Stevens presided over a good attendance of members. In introducing the subject, Mr. Wright pointed out that no branch of gardening was so important as that of the arrangements of plants in gardens. Many practical hints were given. An animated discussion followed. A vote of thanks was proposed and carried unanimously.

— **BOURNEMOUTH GARDENERS' ASSOCIATION.**—A lecture on the *Primula* (Chinese Primrose), illustrated by lantern views, was given on Tuesday evening before a large attendance of members by Mr. James Martin, from the firm of Messrs. Sutton & Sons, Reading. Mr. Martin, in the course of his lecture, referred to the progress made in the cultivation of this useful winter-flowering plant since its introduction in 1819, and by the aid of the lantern (manipulated by Mr. Cox) forcibly demonstrated the great improvements made by cross-fertilisation, resulting in a great variety of colour, from the purest white to the deepest crimson, as seen in the New Crimson King, introduced for the first time this season. He also drew attention to the star or stellata form of this flower; a reversion to the original type, but which, on account of its graceful habits, is now becoming a favourite variety. He regretted to say that many gardeners were neglecting the *Primula* and other winter-flowering plants in favour of the *Chrysanthemum*, and which he thought was being overdone to the exclusion of other useful flowers. Mr. Martin, who is a most able and entertaining lecturer, concluded with some practical remarks on cultivation. A cordial vote of thanks was passed to Mr. Martin, Mr. Cox, and Messrs. Sutton & Sons for the interesting and instructive lecture.

NOTES ON MELONS.

THE earliest plants from a sowing made at the beginning of January, planted out at the beginning of February, and duly attended to in a light well heated structure, have the fruits set or setting on the first laterals. A rather drier atmosphere, and no more water than to prevent flagging, with an increase of temperature of about 5°, and a circulation of warm air, are desirable during the setting period. The flowers should be fertilised every day when fully expanded; pinch out the points of the shoots one or two joints beyond the fruit. When the fruits are set, and about the size of a Walnut, give the bed a thorough watering, and in a day or two add soil to the sides of the ridges or hillocks, pressing it firmly, and again supply water. Both the soil and the water should be of the same temperature as the bed. Stop the subsequent growths to one or two joints, and prevent overcrowding by rubbing off shoots from which there is not room for the foliage to have full exposure to light.

If the bottom heat be kept steady at 85° the fruits will swell all the better. Do not overcrop the plants, but leave the fruits proportionate to the vigour—two on weakly, three or four on vigorous, and very strong plants may carry six fruits. The night temperature may be 65° to 70°, 75° by day, ventilating from that point, increasing to 85° or 90°, closing between those heats, and sufficiently early to increase to 90°, or 95°, or 100°. Damp the house in the morning, syringe moderately by or before three o'clock on bright warm afternoons, damping the paths and walls in the evening. Keep the evaporation troughs filled with liquid manure. Plants in narrow beds will require plenty of liquid nourishment, always an advance of the mean temperature of the house, and top-dressing of rich material.

The growths on successional plants should be trained regularly, removing every alternate lateral, rubbing them off directly they are perceived, the remainder being trained to the right and left of the main stem. Pinch out the points of primary growths after they have extended two-thirds of the required distance. Increase the supply of moisture both at the roots and in the atmosphere as the days lengthen, but avoid making the soil sodden or the atmosphere saturated constantly with moisture.

Pot seedlings directly they show the first rough leaf, shading until re-established. Stop plants for pits and frames at the second rough leaf; those for trelliswork should have a small stick placed to each, securing loosely, and rubbing off the laterals while small up to height of the trellis. Transfer to larger pots as required, not allowing them to become rootbound, but plant out as soon as the roots are well hold of the soil and showing round the sides of the pot. Sow more seeds to afford plants according to the demand. Plants from seed sown now will give excellent results grown in frames after clearing them from forced Radishes, Potatoes, &c. In pits and frames a bottom heat of 80° should be secured to plants that are growing freely, renewing the linings as required. In newly made beds the bottom heat should be about 90°.—GROWER.

AN AMATEUR'S REMINISCENCES.

[On reading the spring number of "our Journal," with its "portraits of some famous writers of the past, and of some veteran contributors," I was stirred by an irrepressible impulse to send a few reminiscences of one of the "veteran readers" of the time-honoured publication, which, under its original name of the *Cottage Gardener*, gave me my first book knowledge of "the purest of human pleasures."

It is now forty-seven years since I purchased my first number of the *Cottage Gardener*. I was then a young man contemplating marriage. Though born and bred in a large manufacturing town I had a large quantity of country blood in my body, for my father and mother were both natives of one of the most rural parts of Worcestershire, as were their parents and grandparents before them. They both possessed ingrained country tastes, which survived, spite of the many antagonistic tendencies and influences of town life. I was thus fortunately surrounded by many things, the result of these country tastes, which the bulk of townspeople in those days had few opportunities of being acquainted with. For instance, my parental home was always brightened with well-grown window plants, which were the admiration of everyone who saw them; we usually had cut flowers in the living rooms; and we kept poultry and pigs. I thus had from my earliest days a loving familiarity with plants and flowers, and knew the taste and goodness of new laid eggs and home-cured bacon.

My parents had many country relatives and friends at whose houses and farms I usually spent my holidays from school; and these good-natured people kept us well supplied with all sorts of country produce, which arrived by coach or carrier in well-remembered hampers—poultry, honey, and fruit. Doubtless my surroundings and daily experiences had a share in giving me a taste for country life and pursuits, though heredity, probably, had quite as much, if not more, to do with it. Anyway, it seems to me quite natural that I should have made up my mind to possess a garden as soon as I commenced housekeeping and had a house of my own.

Looking forward to the possession of a garden some day, I, as a matter of course, felt that I ought to know something of the management of one. But the problem was "How to get this knowledge?" Present day readers will probably think this a rather silly question, for to them the obvious answer would be to get a good manual and subscribe for the "Journal." Ah! but in those far off days there were practically no such books as there are now; and what townsmen fifty years ago knew anything about gardening weeklies? Even then, however, two such publications had commenced their long careers of usefulness—"The Gardeners' Chronicle" and the *Cottage Gardener*, but I had never heard of either.

Among my friends I had the good fortune to possess one who, as I afterwards found, was one of the best amateur gardeners of his day. He was one of the earliest men to advocate the establishment of village flower shows; and I cannot help thinking that the *Cottage Gardener* had much to do with the worthy part he took as a pioneer in that work. He was a subscriber from the issue of the first number; and it was from him I learned of its existence, and on his recommendation that I became a subscriber in the year 1852. Later on he gave me a complete set of bound volumes, from vol. i. to vol. xiii. From that time I read the *Cottage Gardener* sedulously, and from it gained all my earliest ideas about gardening. Bit by bit I slowly acquired knowledge, for the articles were many of them written with special reference to the needs and requirements of those, who like myself, knowing nothing about the subject, earnestly desired to know everything.

Much as I have read since about gardens and gardening, I still look back on the articles which appeared week after week from the pen of dear old Donald Beaton and his revered fellow workers with the warmest appreciation of their interest and merits, and think they gave me more pleasure than anything has done which I have read since. The writings of "D. B.," from their suggestive unusualness, originality, practical value, and quaint humour have always had a special charm for me, and I shall always regard that worthy old man as my first master in the refining art of gardening.

It did not take me long to find out that I should understand the articles in the *Cottage Gardener* to more purpose if I knew more of the technology and technique of the subject; hence I was early led to buy another work by the contributors to the *Cottage Gardener*—namely, the "Cottage Gardeners' Dictionary." Thus equipped I made enough progress in theoretical knowledge to make one yearn for personal acquaintance with some good gardener, so that I might have the chance of seeing something of practical work. Now, among my country friends was one who farmed somewhat largely on the estate of the late Sir William Smith, of Eardiston, in Worcestershire, and the worthy baronet had a fine garden in the heart of one of the fruit-growing districts of that beautiful county. During one of my summer holidays my farmer friend made me acquainted with his landlord's head gardener, Mr. John Miller, the elder brother of a still more

famous gardener, Mr. William Miller, whose recent retirement from Combe Abbey Gardens was chronicled by the gardening press a few weeks ago. This worthy man gave me my first introduction to high-class gardening. The cultivation of dwarf fruit trees in gardens, especially Pears, had not long before been introduced by the late Thomas Rivers of Sawbridgeworth; and in the Eardiston gardens I saw numbers of such trees finely burdened with handsome fruit, of which Mr. Miller was very justly proud. It was no doubt the sight of these trees at a very impressionable period of my life that gave my mind a bias towards outdoor fruit growing, the pursuit of which has been one of the greatest pleasures of my life.

In March, 1854, I entered into possession of my first garden. It was situated in a pleasant village outside of the town of my birth, and overlooked a finely wooded park, now alas! covered with roads and houses. A more neglected plot of ground I never saw. The ground was trampled hard, as though it had been a playground, and it possessed neither tree nor plant of any kind, except a few weeds. Its only merit was that it was pleasantly situated in pure air, uncontaminated by smoke. I afterwards proved that it was capable of growing good crops of flowers and vegetables, and the salubrity of the situation was shown by the success I subsequently had with such susceptible plants to the smoke of towns as the old China Rose. On my first gaze I did not think it an ideal spot for a young would-be gardener to make his first attempt at cultivation.

My course of reading for a year or more in the *Cottage Gardener* and the "Dictionary" fortunately led me to think that deep trenching was the best thing to be done, and this was my first job in practical gardening. The soil proved deep enough to suggest this, rather than bastard trenching, as the more advisable operation. As the work progressed plenty of well decomposed stable manure was intermingled with the soil. My next step was to lay out the part nearest the house into a small geometrical flower garden, based on one of the designs in my beloved *Cottage Gardener*. These small beds I filled with herbaceous plants and the seeds of a quantity of the best annuals, selected from an excellent list furnished me by Mr. Miller, whose directions as to sowing and cultivation I most carefully followed. The remainder of the plot was devoted to vegetables and a few fruit trees. My success with this, my maiden attempt, was sufficiently great to encourage me to more ambitious efforts later on. It is needless to say I made a few mistakes, but even they proved excellent helps in the way of training.

Such was the commencement of my career as an amateur gardener; and looking back to that time I feel that I owed whatever success I achieved to the wise teaching of the *Cottage Gardener*, and can never be grateful enough that I made acquaintance with it so early in my career. From that day to this, as the *Cottage Gardener* or the *Journal of Horticulture*, it has always had a first place in my regard, and always will have, I feel sure. Should the worthy Editor encourage me with his approval of this communication I may at some future time attempt a few more of my reminiscences, and give more proofs of my indebtedness to "our Journal."—AMATEUR.

[We shall welcome further reminiscences from an ardent lover of gardening who has made great progress in the world, and induced many other amateurs by his teaching to learn to love and labour in the pursuit that has added so much to the happiness of his life.]

THE AURICULA—A HINT.

WHATEVER the future of the Auricula in Scotland, may be, its fortunes are at present at a low ebb. I speak of what are called stage varieties. Of my acquaintance, eight growers of the flower have died within fifteen years. Of two large collections the remnants still exist, I believe, in their owners' hands, and now I know of only four who make a speciality of the Auricula, one of these being an enthusiast, and the only recruit to the dwindling ranks. It is so far satisfactory that the flower is so much esteemed and well cared for in the south.

To the inexperienced, a repeated word of timely advice may be useful. At this season many a plant may be lost or saved. I have just been over my stock, giving each a little fresh surface soil. This, besides improving their appearance, encourages the emission of roots at the neck. But in a few cases I turned out the plants altogether and repotted. Growth had generally well begun, but these were laggards, and in one or two there was slight rotting of the stem and fibres. Where this is the case, and the inward turn of the edge of the leaf is an indication of something wrong, scrape the affected part quite clean, rub with powdered charcoal, repot, and a plant is saved that would otherwise probably dwindle and go off. If the rot be slight and near the surface, repotting may not be necessary. I know that beginners hesitate to turn out their plants. I do so at any season, and I have frequently exhibited successfully in May Auriculas repotted in March. In fact the Auricula rather likes to be knocked about in this way.

Severe weather at this time makes protection advisable, not that the plant itself would suffer, but the truss, in some cases already well above the foliage, would be spoiled by the frost.—A NORTHERN AMATEUR.

TRANBY CROFT.

BEING in Hesse recently I made a point of having a look round the gardens of Tranby Croft. I am not now going to attempt a full description of them. My notes were brief, time being an evening. Besides, this is not the time of year to do full justice to the several branches of gardening so well carried out by Mr. Leadbetter. In the fruit houses I noticed the earliest house of Vines swelling off a nice crop of bunches after thinning. Later Vines were breaking very well, with a promise of abundance of Grapes later on. Peaches and Nectarines were swelling freely in the early house, and the trees betokened their ability to carry a full crop of fine fruit to maturity.

In the general plant houses there was a fine display of bulbous plants of sorts—viz., Amaryllis in variety, Hyacinths and Tulips, Lachenalia Nelsoni, Begonia Gloire de Lorraine, Cyclamens, and to my great surprise some very nice heads of Poinsettias. The plants were in only 3 and 4-inch pots, and yet had heads fully 6 to 8 inches in diameter. I was assured they had done duty on the dinner table and other forms of

point north and south. It is about 75 feet in length by 18 in width. The pitch of the roof is somewhat flat, say at an angle of about 30°. As will be known to many of your readers the temperature in houses of this form is not so liable to sudden fluctuations as when the roof is of a steeper pitch. The lights on each side are about 3 feet high, and so hung that an abundance of ventilation can be given when required. Mr. Leadbetter tells me that free ventilation is one of the main necessities of successful Carnation culture indoors. Of course in the bitter weather like we are having at the time of writing care is required. For a week we have had keen north and north-east winds, with from 10° to 14° of frost every night. At no time must a stuffy damp atmosphere be allowed, or the plants are certain to suffer thereby.

There are side stages all around the house with a path and a central stage, as is usual with the general run of plant houses of the width given. These stages are covered with small, clean, sea gravel. The centre division is filled mostly with varieties of Tree Carnations. Flowers have to be supplied all the year round. Some fine plants of Winter Cheer full of flowers were very prominent. Uriah Pike promised well shortly; I

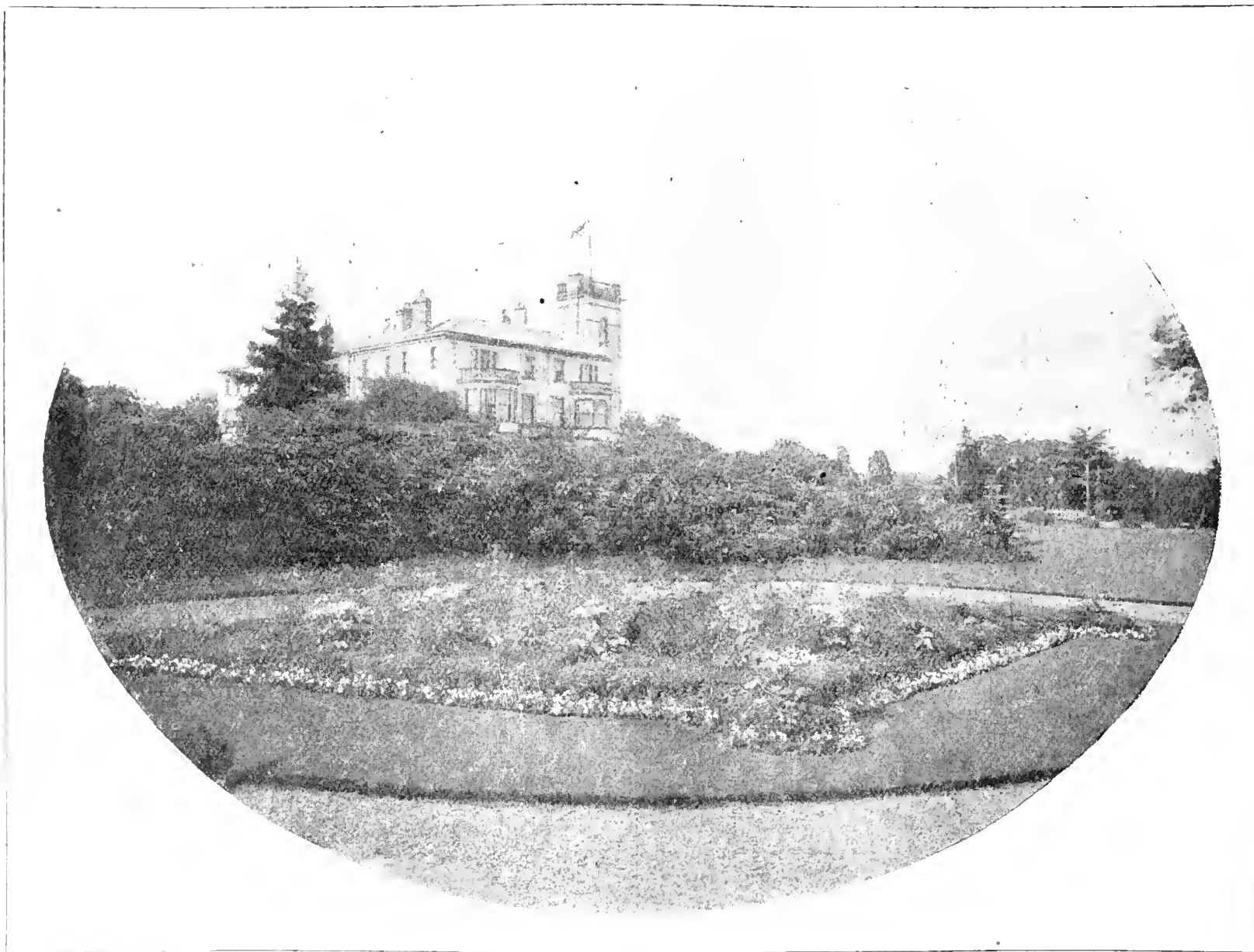


FIG. 62.—TRANBY CROFT.

house decoration on several occasions, and yet were quite fresh when I saw them. Mr. Leadbetter should give your readers his method of producing them at this time of year. In a north house were some very fine potfuls of *Disa grandiflora*, which promised to give a fine display later on. Amongst forcing shrubs were a good lot of *Spiraea confusa*. It was new to me in this form, but I am disposed to think it has a future before it for forcing. I am not sure as to its lasting qualities when used for cutting, but can answer for its adaptability for this purpose.

The night previous to my visit to Tranby there was a fairly large meeting of members of the Hesse Horticultural Mutual Improvement Society. This society offers small prizes during its winter session to various objects in connection with gardening. Many of these competitions are confined to under gardeners. The night in question the competition was for the best arranged vase of cut flowers for a drawing room table. One of the under gardeners from Tranby, viz., Mr. Donoghue, was rightly adjudged the winner. Cut sprays of *Spiraea confusa* along with a few flowers of single *Narcissi* were with foliage the occupants of his vase. However, I must not wander away from what mainly took me to Tranby. It was to see the Carnation houses.

I had heard from gardening friends who had recently seen them that they were very good, both the structures and their occupants. The house the plants are growing in is a span-roof in three divisions. Its ends

have not seen such healthy, free-growing plants of this variety as were here. The two end compartments were filled with varieties of *Malmaison* Carnation. They certainly were fine, well-grown plants. Mr. Leadbetter does not grow them on after the second year from the layers, unless it chances to be a plant or two of some new variety. Last year's layers were on the side stages, mostly in 5 and 6-inch pots. The previous year's layers were on the centre stages in 8 and 9-inch pots. These latter are allowed to carry one flower only to a shoot. I could see that many of them would thus produce from fifteen to twenty flowers.

The potting material is mainly Banstead loam, with clean sand, and in some cases a little fine peat or well decayed leaf soil is added. Good drainage is an absolute necessity. Some broken oystershells may be used over the crocks. Firm potting should be attended to, as if potted at all loosely the roots are sure to suffer in winter from over-moisture. When the flowers are opening occasional waterings of weak clear soot water are given. Great care should be used in giving artificial manure. The flowers may be increased in size by it, but there is risk in the constitution of the plants being injured, which tells later on when either repotted for the second year's blooming or used for increasing the young stock of plants raised annually about August.

Mr. Leadbetter affirms that if a suitable structure is at hand and attention paid to airing, watering, firm potting, also good general attention

is given, there is no difficulty in the successful cultivation of these very useful and beautiful all-the-year-round flowering plants, at any rate the results of his work and directions are self-evident.

I append names of the leading varieties grown at Tranby: Winter Cheer, Uriah Pike, Duke of Fife, Mrs. Leopold Rothschild, Princess of Wales, Churchwarden, Lady Grimston, Mrs. E. Hambro, Trumpeter, Calypso, Prime Minister, and Princess May, which is very highly spoken of by experts in this class of plant.—H. J. C., *Grimston*.

[Though our contributor shrinks from making reference to the grounds of Tranby Croft, we may say of them, after a visit paid during the early summer of last year, that they are amongst the most charming that it has been our pleasure to see. As a suburban home Tranby Croft is ideally beautiful, and the interest of Mr. and Mrs. Arthur Wilson is in favour of the embellishment of its many beauties rather than the reverse. The variety and excellence of the Conifer avenue would be difficult to excel in the county of Yorkshire. The trees are in splendid form, though rather too thick to allow of their individual proportions being appreciated to the full. In the pleasure grounds and gardens

them, as he was a frequent visitor at The Grange Gardens, Wallington, when I was local secretary for that district, and he scarcely ever left without contributing at least a shilling, sometimes more, to the money box there. In that way he paid more than the usual 5s. annual subscription, but owing to the manner it was given it was credited to me, and forms part of the £80 that is placed to my name in the list, which is sufficient to pay allowances to six orphans for one year. As it happened, his children had left the country before the date of the election, and were thus disqualified from receiving any benefit from the Fund.

It would be a great help to the Fund if every gardener would adopt the practice of having a money box and drop in a weekly coin himself, and give other people an opportunity of doing likewise. Mr. B. Wynne, the Secretary, would be delighted to receive the contents of the boxes, and the total amount from these should be sufficient to insure the election of several poor children.—G. W. CUMMINS, *Balmedie, Aberdeen*.

YOUR correspondent "A. D." (page 153) is anxious to know why there is so much indifference shown on the part of gardeners towards this Fund

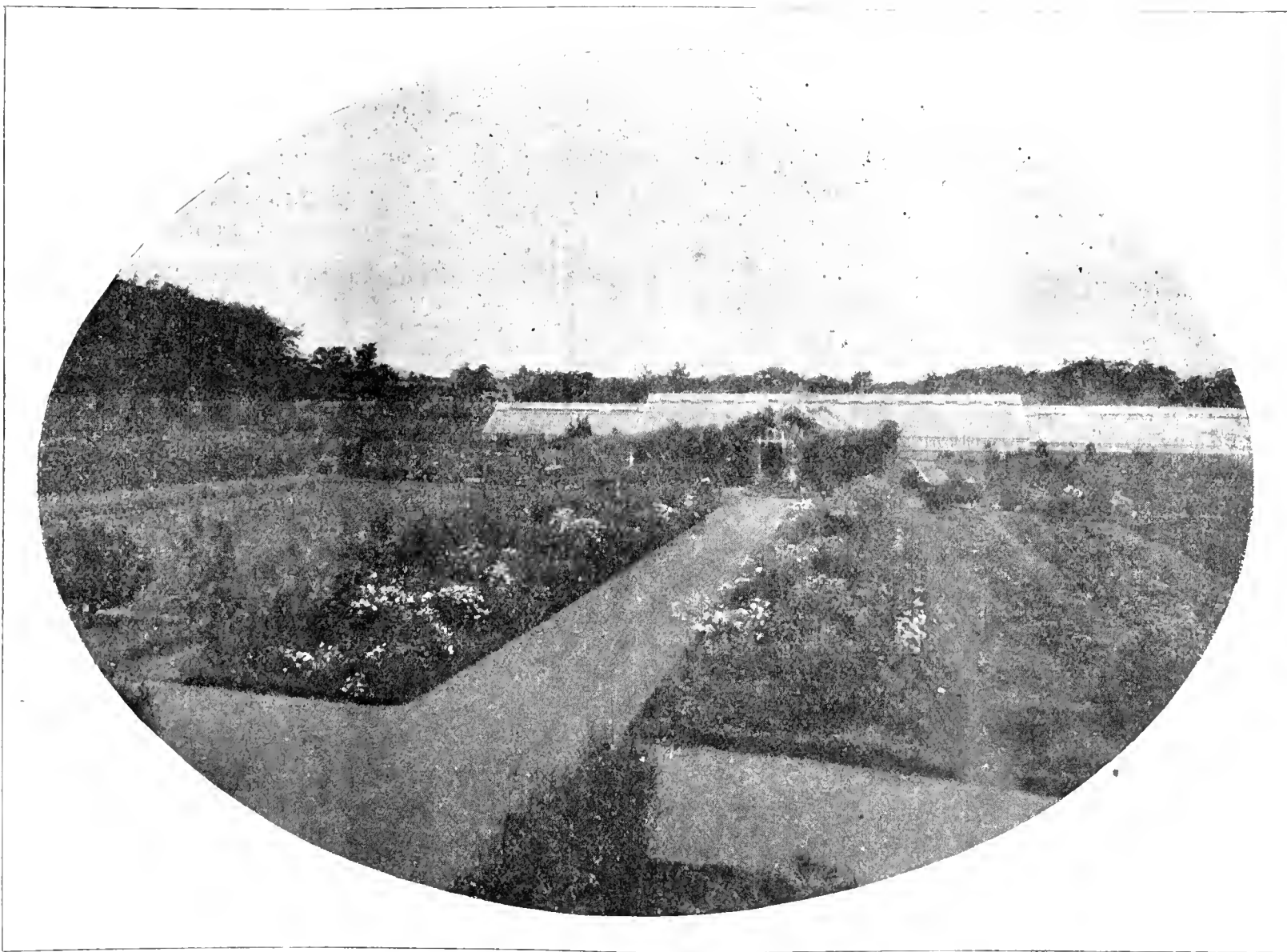


FIG. 63.—IN THE GARDENS OF TRANBY CROFT.

surrounding the mansion endeavour has been made to form fresh features and to present additional charms to the visitor, and success has crowned the efforts made. The winding paths, the nooks and corners, convey the impression that the estate is very extensive, whereas it is compact, and the best use has been made of the space to be dealt with. The skilful hand of Mr. Leadbetter is seen out as well as indoors, and in every department of a busy establishment there is a tidy cleanliness that is most pleasant to observe. It is not now possible for a complete description of the estate to be given, so two photographic views are provided. The former affords a peep into the pleasure grounds and a glance at the mansion beyond, and the latter shows the herbaceous borders in the kitchen garden. Tranby Croft is one of the estates in the north of England that are best worth a visit, and when anyone makes a tour, however brief, must be included. Our photographs were taken by Mr. W. E. Martin, *Hull*.]

ROYAL GARDENERS' ORPHAN FUND.

I MUST take exception to the statement of "H. D.," page 153, that "not one of the fathers of the nineteen children nominated for election this year had been a subscriber to this Charity." True, their names are not in the list of subscribers, but I was personally acquainted with one of

I will not attempt to answer this question, and not being a subscriber myself I know nothing of the inner working of the Fund. One cannot, however, shut one's eyes to the fact that there is a great amount of dissatisfaction expressed amongst subscribing gardeners in the provinces as to the salary given to the Secretary, which is £100 per year. This is more than nine-tenths of the gardeners in the country receive. It thus takes the subscriptions of 400 gardeners to pay the Secretary his salary before there is anything for the orphans. I have heard subscribers discuss this subject in various parts of the country, and in no instance have I heard one of them uphold the management. One and all expressed themselves as opposed to so much being paid in salary. There are probably many subscribing gardeners in the country who would do the work equally well for half that amount, which would benefit the poor children for whom it was intended. In any case, a little light on this subject will do no harm to the society.—S., *Yorks*.

"A. D." asks why more gardeners do not subscribe to the funds of this Charity. I will give him one reason—viz., the appointment of a Secretary at a salary of £100 a year. Country gardeners fail to see why their money should be spent in this lavish manner. One would have thought half that sum was sufficient remuneration for secretarial duties. This is not merely the opinion of myself but that of hundreds of gardeners throughout the country.—A COUNTRY GARDENER.

EARLY SPRING AROUND JERUSALEM.

THE writer recalls many features of interest, such as an ardent lover of Nature might revel in, during a sojourn in the unique configuration of this for all time wonder-enthralling country. At the first blush I must confess the soil seemed as if its powers of fertility had been utterly extracted, and only a grey rocky and barren crust survived, not much else than the sombre but useful Olive being in evidence, and many of these gnarled and stunted to a degree.

Standing as it does some 2500 feet above the level of the Mediterranean, Jerusalem and the peaky mountainous tableland around has, as may be surmised, an atmosphere keen and extremely invigorating early in the year. I recollect if I made a start betimes in the morning, the roads were hard and the ground white with hoar frost. You may, too, experience a cutting cold wind. Nevertheless the sun is very powerful, and by midday of such great heat as to account for the early growths in flowers that one comes across.

Even on these elevated heights, and no later than mid-January, I was delighted with the lovely red Anemones and Orchids amongst other flowers which I saw in my saunterings round about Bethlehem, Solomon's Pool, and Hebron. The latter is, I think, considerably lower in altitude than Jerusalem, and is famous, besides the mosque where the patriarchs are buried, for the time-honoured Abraham's Oak. This said tree is of gigantic girth and proportions, and evidently sufficiently venerable looking to sustain its legendary character. I bore away with me as a trophy one of the huge acorns with which the ground was strewn. A precocious kind of Gentian revealed itself to me in the Valley of Jehosaphat between Jerusalem and the Mount of Olives. On the very summit of the latter, after enjoying the hospitality of a resident there, I gazed my fill from the house top upon the most sublime and marvellous *coup d'œil* which I have ever experienced, the most striking features being the far away Dead Sea, with the blue mountains of Moab in the extreme background bathed in the glories of the setting sun. Had the "latter" rains not failed the season I was in Palestine, doubtless many other flowers would already have burst into bloom.

A fairer and more likely field at this early period affords itself down in the plains of the Jordan. Quite a carpet of the red Anemone we galloped over in our scamper on our game little Arabs across these plains from Jericho to the Dead Sea. Were such ever again taken in hand and cultivated by irrigation, what a rich and fertile harvest would result. The Jericho Oranges are the finest in the world, eclipsing those even of Jaffa, but unfortunately do not stand exportation. The contrast in the climate from Jerusalem owing to its position under the mountains, and the remarkable descent to 2500 feet below the level of the Mediterranean, causes Jericho to be a place of very great heat and the lowest city in the world.

Having trusted myself to the rather uncanny looking waters of the Jordan by way of an early morning bathe, in company with several others we rowed down the river into the Dead Sea, and after another bathe, in which I tried the possibility of sinking without any success, my dragoman and I plunged into the wilds of the Dead Sea Mountains, with the view of reaching the lonely monastery of Mar Saba before sunset. A weirder spot it would be hard to find. Built on the very edge of a precipitous gorge, the monks, to the bearer of a letter of introduction from the Armenian Patriarch, receive a traveller, and give him a bare sustenance of bread and water, and a lodgment for the night. In my own case we were not destined to reach there as soon as hoped, for after going up and down the most pathless and impossible-looking mountains, my dragoman (a Syrian Jew) frankly acknowledged he had lost us. I intimated to him that his backsheesh would be lacking, and broke my umbrella over his back, but to no avail; and being almost dark (there is scarcely any twilight) we accepted *faute de mieux* the hospitality of a Bedouin Arab encampment, and reposed our limbs in the tent of a patriarchal Sheik after a sumptuous repast, together with two pure white camels, a lot of black goats, and innumerable smaller companions of a more troublesome nature.

Here towards dawn the jackals and hyenas helped to wake us for an early start across those wild and desolate regions in the howling wilderness of Judæa, towards our belated goal. Very fresh and beautiful, however, was the sunrise, and the dew sparkled like crystals on some fragrant blue and yellow cup-shaped flowers, which were just appearing in the more sheltered nooks of this vast elevated tableland of mountains. Our Sheik guided us to Mar Saba, and there left us, rejoicing in a liberal amount of backsheesh. Truly these sons of the Desert are a fine, enduring, and heroic race, of splendid physique, and possessing a most dignified and patriarchal mien.

I realised a peculiarly subtle charm in this historic part of Palestine, and left the country by the difficult and dangerous Port of Jaffa with much regret, and a keen desire to revisit the scenes of such abiding interest.—J. A. CARNEGIE-CHEALES.

THE OSAGE ORANGE.

I HAVE read the interesting account of the Osage Orange in your issue of 15th December last, page 453. Perhaps you would kindly give me some further information on the subject. I may say that I know little of gardening or horticulture. In the year 1880 I brought from St. Louis a strange fruit that was new to me, called the Osage Orange. It had a delicious scent, but was apparently quite uneatable. I dried the seeds and planted them, and in a few years we had at Chislehurst, in a sheltered but not protected garden, a fine impenetrable hedge, growing 6 or 7 feet in the year, and which had to be severely cut back to keep it within bounds. I have just obtained from America some cuttings to plant in Worcestershire, as we found that the plants we endeavoured to take from Chislehurst would not grow.

In January of this year we found in the markets of Algiers and Biskra a fruit which we fancied must be an Osage Orange, though the rind of the fruit was rather smoother than that of the one we brought from America.

The Osage Orange makes such a magnificent hedge, with its long stiff thorns, and seems to be so hardy, that I should be glad to know how to cultivate it to advantage. I may mention that our hedge at Chislehurst never had flowers or fruits.—RICHARD B. MARTIN.

[It would be interesting to know if the Osage Orange hedge at Chislehurst passed without serious injury through the memorable frost of February, 1895. We do not know of any better account of the shrub or tree than that of Mr. Jefferies above cited. It has been long known, but not, so far as we are aware, grown to any noticeable extent in England.

Some years ago a proposal, if not an attempt, seems to have been made to cultivate the tree for its fruit in this country, a rather curious notion, as it is not conceivable that anyone would eat the fruits if they were produced, for, though they are not unpleasantly perfumed, there is no evidence that the native North American Indians ate them. They smeared their spears with the juice before going to war, and made bows, if not arrows, of the wood for shooting their enemies, and hence the tree is popularly called "bow-wood."

As to "cultivation," this, for the purpose of fruit production would, we presume, be much the same as that which is appropriate to the Fig, which belongs to the same natural order. Whether grown against walls, or as open standards in favourable positions in the south of England, Fig trees do not bear till they arrive at maturity, and produce firm, short-jointed wood, which ripens to the tips. They would never do so if cut closely back yearly to keep them in hedge form, as then they would produce gross and essentially fruitless growths after the manner of the "Orange" hedge of Chislehurst.

The Osage Orange (*Maclura* or *Toxilon*) however, does not belong to the Orange (*Citrus*), but, like the Fig and the Mulberry, to the Nettle family, and the trees when mature are said to attain a height of from 20 to 60 feet in some parts of America. Moreover, as Mr. Jefferies remarked, *Maclura aurantiaca* is dioecious, the staminate (male or pollen bearing flowers), and the pistillate (female or fruit producing forms) being produced on separate trees, so that both kinds are necessary for fruiting purposes, and then specially favourable conditions and many years of waiting for a crop. The tree from which the specimen figured in December was taken is said by Mr. Jefferies to have been growing for many years against a wall with a southerly aspect.

Reverting to the proposed Worcestershire "hedge." The failure of the plants removed from Chislehurst probably resulted from their either being too large for successful transplantation, or to their not having been cut down nearly to the ground after planting. If they were not so cut down, and more are obtainable, let the plan be tried. We fear there is no certainty that the cuttings procured from America will grow. Cuttings of the roots are said to be more likely to do so than cuttings of the shoots, and plants are also increased by layering. If more seeds can be procured from America the Chislehurst experiment might be repeated, with the expectation that it would answer in Worcestershire.

We shall be glad to have particulars of further attempts to establish a hedge and the results of them. There are plenty of Osage Orange hedges in America, and there may be some in England, though we do not happen to have seen them. The Chislehurst example certainly showed abundant freedom of growth, but we should like to know what effect the arctic frost of 1895 had on the quickly formed and "impenetrable hedge."]

BROCCOLI SPRING WHITE.—For early use this is a particularly reliable and useful variety, and is one that has been proved, not once or twice, but over a series of years. Broccoli is neither abundant, nor in my case of normal size and strength. Small heads are nevertheless of much value now, and furnish an agreeable change to Brussels Sprouts, forced Beans, Asparagus, and other green and root crops. It is a variety that those who may have had a difficulty in getting an early spring supply in past seasons should make a point of securing, to sow during the next fortnight.—W. S.

COMMISSIONS.

BUT for the revelations—of whose truth or otherwise one does not venture to express an opinion—in a certain notorious case, it is doubtful if the question of commissions would have engaged the attention of the Legislature. Now, however, that the Lord Chief Justice of England has taken up the matter, and has prepared a Bill to deal with it, it is probable that some attempt will be made to strike a blow at what are called illicit commissions. That the attempt has not been made too soon is evident from the statements in the Press and from what has come to one's notice. How far the system can be coped with is doubtful, but one cannot but hope that some good may result. The system rules everywhere, and many of its forms are indefensible. We cannot, for instance, defend a system which enables, say a solicitor advising a client over an investment, pocketing a commission from the transaction in addition to his fee for advice and ordinary legal charges. The commission system is hydra-headed, and not at all easy of solution. It is, however, of its application to gardeners and gardening that one would like to speak.

Those best acquainted know that the commission system as it affects employers and their gardeners is comparatively innocent. It is a matter of notoriety that a small commission on orders is generally given by nurserymen to gardeners. This is, one knows, often with the cognisance of employers, who look upon the 5 per cent., or sometimes more, as a small addition to the wages—none too large—of their employés. Some nurserymen set themselves against this practice, and apparently carry on flourishing businesses without its aid. Yet they seem to be the exception rather than the rule; but there is no doubt that nurserymen generally would be glad to see the commission system abolished.

Looking at the matter from the point of view of the employer, who is unaware of it, or who knows it is practised yet is powerless to prevent it, there is little doubt that its prevention would be a gain. All men are not patterns of virtue and honesty. Gardeners, exemplary as they are as a class, have black sheep among them. Among such even a small commission may lead to carelessness in many forms—to extravagant orders for seeds, plants, or sundries, and to general wastefulness in their use. It can hardly be doubted either that the abolition of commissions would in the long run tend to the advantage of the purchaser.

To the gardener, however, who, in accordance with long-established custom, has had his salary supplemented from this source the change would be unprofitable, and in many cases unpleasant. It can hardly be denied that gardeners as a body are not over-well paid, when one takes into consideration their experience, skill, and responsibility. It would thus seem that in defence of the retention of the system could be urged the plea that as far as regards gardeners it is recognised by most people, and is a legitimate addition to their earnings. Yet how small it is in the average garden, and how little an addition to the salary would it prove when put down in £ s. d. It would be better for all if the employer in making his agreement would give a little higher wage, and make the bargain that no commissions were to be taken.

There is in existence, one has had too good reason to believe, from what has occasionally been seen from the columns of the *Journal*, a more demoralising thing still. This has been the giving of testimonials to new seeds or plants in return for a consideration. One recollects a case in which identically worded notes recommending a new speciality were received at the office. This was properly condemned by the Editor, no names, of course, being given. Such practices bring undeserved discredit upon the honest opinions of good men and true in the gardening ranks and among the writers to the horticultural press. Because some are dishonourable those who would scorn to give anything but an unbiased opinion have suspicion cast upon their honest recommendations or criticisms.

The writer has had not a little experience in writing for the *Journal*, and it is due to the great body of those with whose products he has had to deal to say that he has not been approached corruptly to speak favourably of what was offered for sale. Yet offers have been made which would have been to his advantage, and would have tied his freedom to write without regard to personal considerations. He may thus be excused for writing at length upon a question now before the minds of many, and of much importance to gardeners and to the horticultural trade.—PENMAN.

P.S.—Since writing the foregoing I have had an opportunity of perusing the report from the Special Committee of the London Chamber of Commerce on this question. If anyone thinks my studiously carefully written letter goes too far, they will discover ample justification for it in the report. I believe the abolition of commissions would eventually be to the advantage of all concerned—employer, gardener, and nurseryman.—P.

THE TEMPLE FLOWER SHOW.

I NOTICE with regret that the Council of the Royal Horticultural Society have resolved to eliminate from the next great flower show in the Temple Gardens all floral decorations, whether vases, stands, bouquets, sprays, or others. I think that is a mistaken interdiction, because it helps to reduce the show more than it previously was to one dead level of monotony in the material and in the arrangements. Admittedly some of the floral decorations did show the art of preparing them sometimes rather run mad, a few simple regulations might have soon brought the exhibitors into a sane frame of mind. But without doubt exhibits of this nature are remarkably popular and attractive, especially with ladies, and the fair sex invariably comprises the larger half of the visitors.

The art of floral decoration is one of great importance in connection with horticulture, because it presents ways and uses for flowers commonly both beautiful and domestic, which is not only to be greatly commended,

but gives wonderful encouragement to production. There is not a flower show in the provinces, or indeed anywhere else, whereat floral decorations are not made prominent features. There are usually many exhibits at the Temple Show that could bear great reduction with benefit, and thus make ample room for the decorators' and bouquetists' displays. It is true the Council have this year very rigidly limited spaces for certain things, and some good should result, for the great evil of the show hitherto has been too much liberty to make big exhibits, rather than calling for the very best products only.

There is one regulation which a little bothers me to comprehend, and that is the requirement that the backs of rockeries, whilst not over 6½ feet in height from the ground level, must, if on the central stage, have the backs of such erections neatly covered with green baize on both sides. Whenever did a back have more than one side? Evidently something is meant that is not conveyed. Perhaps it means that if there are two backs both must be covered, but then the front side is invariably covered with the rockery and plants upon it. Really such erections should not be permitted at all on the centre stage. The side tables, or on the ground, are the proper places for them. I regret to see so much as 400 feet of ground space allotted to such monotonous plants as *Caladiums* in single groups. Were they used to furnish a carpet to pleasing tall or standard plants each would enhance the beauty of the other.—A. D.

NORTHERN SPY APPLE FOR STOCKS.

THE MARIANNA STOCK FOR STONE FRUITS.

I HAVE been much interested by the controversy that has lately been carried on in your *Journal* on the subject of fruit culture, more especially that of Apples cultivated on the dwarfing system, of which I greatly approve. I have been a grower of fruit, and interested in fruit culture all my life, and in this country for over forty years, so that perhaps I have some little claim to make the following statements.

Owing to the mildness of this climate, one of the worst, if not the worst, enemies to the cultivation of the Apple is the woolly aphis, which attacks both roots and branches to such an extent that until the resistant stocks—viz. the Winter Majetin and Northern Spy—were introduced only a few varieties of Apples could be grown, and those were generally only short-lived. Of the two stocks mentioned, the Spy is decidedly the better—in fact, I believe it is the best stock in the world, apart from its resistant qualities.

I have grown over 500 varieties on it, and from the strong-growing Blenheim Pippin to the weakly Siberian Crab have found the union perfect—no throttling between stock and graft, but a perfect smooth union, which cannot be said of any of the Paradise stocks used. Mr. Sharp, owner of a large experimental orchard at Waikomete, near Auckland, tells me he has fruited upwards of 1500 varieties of Apples grown on the Spy stock, and has never met with any variety in which the union was not perfect. I have found, too, that they bear heavily, and produce extra fine fruit, also by judicious pruning of top and roots dwarf trees can be obtained. In one of our Government Experimental orchards there are numbers of trees not more than 3 feet high bearing Apples, which for size and general appearance cannot be surpassed by those produced in any other part of the world. I feel certain that if some of the English nurserymen would experiment with the Northern Spy as a stock it would prove a success. It is easily grown, either from layers, root grafting, or from root cuttings.

I would like also to recommend a stock we have been using lately for stone fruits, called the Marianna. I believe it came originally from California. Plums, Peaches, and Apricots thrive on it, growing well and fruiting freely. It does not sucker, and grows here as freely from cuttings as a Willow.

I may add in conclusion that few people take more interest in horticulture than myself, and if I can interest others I take a pleasure in so doing.—W. J. PALMER, *Government Pomologist, North Island, New Zealand*

[Though we have seen trees of Northern Spy Apple entirely free from the woolly aphis, or American blight, while the branches of other varieties of Apple trees adjoining were infested, it still appears singular that the roots of the "Spy" stock should render the branches of the Margil, or other varieties of Apples that might be established on the "Spy" proof against the attacks of the enemy. The characteristic essences of Apples—at least that prevail in the fruit—seem to be the same on whatever stock the trees are grown, as is apparent in the case of several varieties being established on the same stock by grafting. This goes to show that the leaves are the agents in providing those essences that give to varieties of fruits their particular flavour, and not the roots, which gather the crude materials that the stems convey to the leaves for elaboration and assimilation. We could understand a branch of the Northern Spy growing, as the result of grafting, on a tree of the Margil, or any other Apple, being free from the aphis, while the other branches of the tree were infested, but cannot so clearly see how and in what way the roots of a stock should have the potent influence suggested. We do not for a moment question the accuracy of Mr. Palmer's statement. We have heard of the same freedom from the aphis of trees on the "Spy" before, and shall be obliged if our Antipodean correspondent can explain the reason of the immunity in question—a matter which can scarcely have escaped the attention of Government scientists. We have no doubt whatever that Apple trees can be made abundantly productive on the "Spy" stock, and it seems to be worth trying in this country. Of the "Marianna" stock for stone fruits we have no knowledge, at least under that name. We are obliged to Mr. Palmer for his interesting communication.]

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MARCH 28TH.

THE meeting was very much smaller than usual at this season, the Orchids were almost conspicuous by their absence, and the exhibits of fruit and vegetables were practically nil, while the chief of the floral displays consisted of spring flowers, Roses, Clivias, and Ferns.

FRUIT AND VEGETABLE COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with Messrs. W. Wilks, J. Cheal, Jas. H. Veitch, A. F. Barron, A. H. Pearson, A. Dean, S. Mortimer, W. Bates, G. Wythes, H. Balderson, F. Q. Lane, J. Smith, J. Willard, and R. Fife. The duties of this Committee were very light.

Mr. A. J. Thomas, Rodmersham, exhibited a dish of seedling Apple Diamond Jubilee, which the Committee desire to see again. Messrs. Richard Hartland & Son, Cork, staged a dish of Drought's Favourite Apple. The R.H.S. Gardens contributed a collection of twenty-eight varieties of Onions to illustrate their keeping properties. The best were Bedfordshire Champion, Danver's Yellow, Sutton's Al, Magnum Bonum, and Sutton's Eclipse, while the whole were in a good state of preservation. Mr. R. C. Notcutt, Woodbridge, Suffolk, sent a dish of Pear Winter Orange, a variety well known in the eastern counties. Messrs. Walker Bros., Basinghall Street, E.C., sent a bunch of Grapes from the Cape; the flavour was good for the season, but the cork dust should have been removed before placing the fruit on the table.

FLORAL COMMITTEE.—W. Marshall, Esq. (in the chair). Present: Messrs. O. Thomas, H. B. May, C. Jefferies, R. Dean, J. H. Fitt, W. Howe, C. J. Salter, G. Gordon, E. H. Jenkins, J. D. Pawle, C. R. Fielder, C. E. Shea, J. W. Barr, H. J. Cuthbert, E. Beckett, E. T. Cook, H. J. Jones, H. Turner, R. W. Kerr, G. Paul, J. Jennings, and H. Selfe-Leonard.

Messrs. W. Paul & Son Waltham Cross, staged a good display of flowering shrubs; the Carnation-flowered Peach with its rosy flowers, the Camellia-flowered form of a more delicate shade, the double Almond, *Pyrus floribunda* Scheideckeri, the double *Prunus sinensis* flore pleno, double French Cherry, *Cytisus scoparius* præcox, *Choisya ternata* beautifully flowered, and *Magnolia stellata*, a beautiful form, contributed to the collection, while the whole was edged with variegated Ivies, *Deutzia parviflora*, and *Osmanthus ilicifolius* variegatus (silver Flora medal). Messrs. J. Veitch & Sons, Chelsea, staged a group of *Cerasus pseudo-cerasus* in very fine form, with a good basket of *Chionanthus virginicus*, *Azalea mollis* albicans with creamy flowers, and *Loropetalum chinense*; also a small group of *Hippeastrums*, one plant bearing seven spikes receiving a cultural commendation. Messrs. J. Hill & Son, Lower Edmonton, contributed one of their well known exhibits of Ferns, comprising specimens of *Cyathea insignis*, *Asplenium caudatum*, *Gymnogramma peruviana* and *chrysophylla*, *Pteris tremula* Smithiana, *Asplenium nidus*, and *Pteris Wimsetti*, excellent plants of *Asplenium Hilli*, and baskets of small *Pteris palmata*, *P. cretica nobilis*, *Adiantum cuneatum* Legrandi, *Nephrodium lepidum*, and *Nothochlæna nivea*.

Messrs. R. & G. Cuthbert, Southgate, staged a collection of *Azalea mollis*. The plants were masses of bloom in a wide range of delicate colours, set up in a bed of Ferns, making a bright attractive exhibit (silver Banksian medal). Mr. G. Mount, Canterbury, again staged a beautiful collection of Roses in boxes, also in vases, with about 18 inches of growth. The most noteworthy were Bridesmaid, Captain Hayward, Madame Montet, La France, Catherine Mermet, Madame Gabriel Luizet, Mrs. John Laing, and Niphotos (silver Flora medal). Messrs. R. Wallace and Co., Colchester, exhibited a small but interesting display of spring flowers, chiefly *Erythroniums*, including *E. revolutum*, Hartwegi, and Johnstoni, with a variety of the Grape Hyacinth, and *Iris reticulata* and *I. caucasica*. Messrs. B. S. Williams & Son, Upper Holloway, exhibited a collection of Clivias. The plants were well grown, and the flowers bright and fresh. The best forms were Marie Reimers, aurantiaca, Prince of Orange, Scarlet Gem, and Van Houttei. Messrs. W. Balchin and Sons, Hassock's Nurseries, Sussex, contributed one of the most interesting displays in the hall in a group of *Boronias*, grown and flowered in splendid form, reminding one of the old days when these plants were popular. *B. heterophylla* was really wonderful, while *B. serrulata* and the curious megastigma were also remarkable alike for their growth and perfume (silver Flora medal).

Mr. H. B. May, Upper Edmonton, staged a fine collection of *Blechnums* and *Lomarias* in forty species and varieties. The chief were—*Blechnum corcovadense* crispum; *Lomaria gibba* robusta, *L. ciliata* Mayi, *L. gibba*, and *L. ciliata* undulata (silver-gilt Banksian medal). Messrs. Barr and Sons, Covent Garden, staged an extensive display of *Narcissi*, comprising the beautiful Queen of Spain, bicolor Horsefieldi, Barri conspiens, tortuosus, Henry Irving, b. Victoria, grand; Emperor, Madame de Graaff, cernuus, Golden Spur, albicans, and many others too numerous to note (silver Flora medal). Mr. P. Purnell, Woodlands, Streatham Hill, exhibited a collection of *Primulas* and alpine plants, forming a very interesting feature. The blue *Primroses*, *Sempervivums*, *Saxifragas*, *Iris persica*, and *Gentiana acaulis* were very attractive to all lovers of this interesting class of plants. Mr. J. Russell, Richmond, exhibited a group of *Dracæna lentiginosa*, a capital decorative plant, with the foliage of *D. indivisa*, but copper-coloured, also a basket of *Viburnum macrocephalum*, a gigantic Gueldres Rose, closely resembling a *Hydrangea*.

Messrs. F. Sander & Co., St. Albans, contributed specimen plants of *Acalyphas* Sanderi and *Godseffiana*, also *Sanderiana*. The *Acalyphas* were very bright at this season. Mr. W. Rumsey, Waltham Cross, staged an extensive display of Roses, comprising five good boxes and numerous sprays. The best were Maréchal Niel, Magna Charta, Général

Jacqueminot, Mrs. Rumsey, The Queen, Gloire de Margottin, Susanne Marie Rhodocanachi, and Souvenir d'un Ami (silver Banksian medal). Messrs. T. S. Ware, Ltd., Tottenham, exhibited a group of spring flowers, consisting chiefly of *Narcissi*, *Chionodoxa sardensis*, *Muscari*, the curious *Fritillarias pudica* and *aurea*, *Gaultheria procumbens*, *Hepaticas*, and *Primulas*. Mr. F. Cant, Colchester, staged a box of Roses, and a few sprays of W. A. Richardson of the correct colour. The best specimen blooms were Niphotos, Madame Hoste, Cleopatra, The Bride, Catherine Mermet, and Maréchal Niel; also plants of *Polyantha* Rose Thalia, a white form, which appears to be very free flowering.

ORCHID COMMITTEE.—Present: Harry J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, R. B. White, H. Ballantine, N. C. Cookson, A. Outram, A. H. Smee, J. T. Gabriel, H. J. Chapman, W. H. Young, F. J. Thorne, E. Hill, W. H. White, J. Jaques, H. T. Pitt, W. H. Protheroe, J. Colman, W. Thompson, J. G. Fowler, F. Mason, T. B. Haywood, and S. Courtauld.

Sir Trevor Lawrence, Banford, Dorking, staged a very choice group of Orchids, consisting of *Odontoglossum Halli*, *O. prionopetalum*, *O. triumphans*, and *crispum*, with a well flowered specimen of *Cattleya Lawrenceana*. The *Cypripediums* *Rothschildianum* and *C. Stonei grande* were very attractive, as were good specimens of *Dendrobium Wiganæ* and *D. Euterpe*, a cross between *nobile* and *Wardianum* (silver Banksian medal). Messrs. Hugh Low & Co., Bush Hill Park, Enfield, staged an interesting group of Orchids, comprising excellent specimens of *Cattleya Trianae* Amesiana, *C. T. enfieldense*, a very beautiful pale form, *Lycaste Skinneri* Imperator, *Dendrobium Vennii*, a deep form of *nobile*, and a good variety of *Odontoglossum*. Mr. Pitt, Stamford Hill, staged a very interesting collection. The *Odontoglossums* were excellent, as were also the *Miltonias* and *Dendrobiums* (bronze Banksian medal).

Messrs. Linden, Brussels, sent a good form of *Odontoglossum Halli* and a *Cypripedium Pauli* superbum. Mr. N. C. Cookson, Oakwood, Wylam, exhibited some good forms of *Dendrobium nobile*. Mr. de B. Crawshaw, Sevenoaks, staged a grand variety of *Odontoglossum crispum* with very broad flowers, also a well flowered plant of *O. Andersonianum*. Mr. W. Thompson, Walton Grange, exhibited a plant of *Odontoglossum Halli* leucoglossum nigrum, which attracted a lot of attention; also a good *O. Wilckeanum* Primate, a yellow form with broad blotches of brown throughout the flower. Mr. W. C. Walker, Winchmore Hill, exhibited a well-flowered plant of *Eriopsis Ruidobulbon*.

CERTIFICATES AND AWARDS OF MERIT.

Azalea hybrida (R. & G. Cuthbert).—A cross between *A. mollis* and *sinensis*. A rosy orange form with the upper segment spotted with a deeper shade (award of merit).

Cattleya Trianae Amesiana (Hugh Low & Co.).—A good variety. Sepals and petals white, lip white with orange at the base, the outer portion pale mauve (award of merit).

Dendrobium emalculatum (J. Sparkes).—A small, but pretty flower, having a violet lip; the sepals and petals white at the base, with yellow tips (botanical certificate).

Erica propendens.—A good *Erica* with mauve flowers, very free (first-class certificate).

Lælio-Cattleya nigra var. *Etoile d'Or* (Jules Hye).—Sepals dull yellow, petals slightly paler, throat veined with chocolate lines (first-class certificate).

Narcissus King Alfred.—A fine form with broad perianth and a bright yellow tube (award of merit).

Odontoglossum nobiliss (Jules Hye).—Sepals and petals yellow with large blotches of chocolate, lip slightly fringed, yellow at the base with paler edges (award of merit).

Pear Winter Orange (R. C. Notcutt).—A stewing Pear of considerable merit, said to be well known in the eastern counties; a short fruit with a deep brown skin, and an open eye (award of merit).

SCIENTIFIC FRUIT CULTURE.—When I asked a distinguished Welsh fruit grower, at the close of Mr. Pickering's recent lecture on the experimental work being conducted on the Woburn Fruit Farm, what he thought of it all, he said, "Well, I have come hundreds of miles to hear this lecture, and I am none the wiser." Possibly hard-headed, practical fruit growers cannot appreciate new forms of scientific teaching. Still, with every disposition to be a learner, I could not for the life of me comprehend how or in what way much of what seemed to be trivial experimentation carried on at Woburn was going to benefit fruit culture. I could but fancy that some of the grave and experienced seigneurs who sat and listened to the lecture must have wondered what they, as fruit growers, had been at all their lives that this sort of thing should be needful. I found it difficult to repress a smile, for I like to show all possible courtesy to those from whom I may differ, when I learned that it was the practice to have the sixth leaf from the point of each shoot on the young trees gathered each season and weighed, to enable a test to be obtained of the respective tree's development; also that it was the practice to have all the prunings from the trees severally weighed also, and even thought the person who had to perform such duties, and tabulate them, merited some sympathy. Really, should there be anything of a practical nature to be deduced from the Woburn experiments, it is evident that nothing useful or tangible can be so obtained until some ten or twelve years have elapsed since planting, and if the work of leaf picking and weighing has to go on all the time, as well as taking the weights of the prunings of each tree, it must be a time of trial to somebody. Let us hope that great good, not apparent now, will be the eventual outcome of what must be a tedious and time-absorbing operation.—A. D.

KEW NOTES.

THE north wing, added to the temperate house last year, is to be opened to the public at Easter. The erection of this house completes the building according to the original design, modifications only being made in such modern improvements as would insure the maximum amount of light with safety to the structure. Its dimensions are similar to those of the south wing—Mexican house, finished in 1897—i.e., length inside 112 feet, width 62 feet, height 37 feet. As in the Mexican house, everything is planted out, the beds being arranged similarly. The centre path is a continuation of that running through the entire structure, making in all a promenade 200 yards long. Although fitted with hot-water apparatus, fire heat will only be given in cases of a very severe frost.

Using this building as a cold house fills a long felt want at Kew, there being many choice flowering and ornamental foliage trees and shrubs that are not altogether hardy, but require little protection. Particularly is this the case with many of the Chinese, Japanese, Himalayan and Californian plants, and it is from these countries—more particularly the three former—that plants have been selected to furnish the structure.

The place of honour is given to Himalayan plants, and the house will in future be known as the Himalayan house. Rhododendrons naturally take the foremost place, a large number of species being represented. Of the species may be mentioned *R. arboreum*, *Falconeri*, *barbatum*, *niveum*, *argenteum*, *Nuttalli*, *Dalhousiae*, *calophyllum*, *fulgens*, *formosum*, *Edgeworthii*, *Griffithianum*, *triflorum* (fig. 64), and *ciliatum*. In addition to these there are a number of garden hybrids, such as *Kewense*, *Countess of Haddington*, *Forsterianum*, *Lady Alice Fitzwilliam*, *Gibsoni*, *Sesterianum*, and others. Several plants of *R. præcox* have been a mass of bloom during the last few weeks, showing what a little protection does, as outside every flower has been killed by frost. Other notable Himalayan plants are *Pentapterygium serpens* and *rugosum*, *Vaccinium leucobotrys*—"Bengal"—*Luculia gratissima*, *Buddleia Colvillei*, *Agapetes buxifolia*, *Elæagnus latifolius*, and *Magnolia Campbelli*. Several other genera are represented by one or more species, as *Decaisnea*, *Acer*, *Cornus*, *Pieris* and *Liliums*.

Turning to Chinese and Japanese plants the following are worthy of mention:—*Camellias* *Sasanqua*, *rosæflora*, *Thea*, *reticulata*, *hongkongensis*, and varieties of *japonica*. *Rhododendron decorum*, *lacteam*, *Delavayi*, *hybridum*, and *yunnanense* from Yunnan, and *R. serpyllifolium*, *Schlippenbachii* and *linearifolium* from Japan; *Styrax japonica*, *Stuartia pseudo-Camellia*, *Loropetalum chinense*, *Diospyros Kaki*, *Photinia japonica*, *Pæonia Moutan*, and *Nandina domestica*. In addition to these the following are represented:—*Lilium*, *Clerodendron*, *Ardisia*, *Rubus*, *Dendropanax*, *Quercus*, *Rhaphiolepis*, *Akebia*, *Rosa*, *Citrus*, *Acanthopanax*, *Magnolia*, *Ligustrum*, *Edgeworthia*, *Illicium*, *Meliosma*, *Euonymus*, *Abelia*, *Hydrangea*, and others.

Among the few plants from other countries are *Magnolia grandiflora*, *Fremontia californica*, *Carpenteria californica*, and *Tricuspidaria Hookeriana* from the New World, the extremely rare *Quercus alnifolia* from Cyprus, and some of the winter flowering *Kniphofias* from S. Africa. For clothing pillars and roof, garden *Clematis*, *Roses*, and other plants are employed.

Variation is given by two rock pools, the ends of two centre beds being utilised for the purpose. Here water and marsh plants are to be grown, while the rocks are utilised for *Saxifrages*, *Ferns*, and other plants.

From the plants mentioned it will be seen that a fine display of flowers will be had during winter and spring, while a dozen or more species of *Lilium* will make an effective show in summer.—W. D.

HORTICULTURAL SHOWS.

TORQUAY.

THE eighth show promoted by the Torquay District Gardeners' Association, of which Mr. F. C. Smale is the efficient Secretary, was held last week, and considered superior to all its predecessors. Entries were more numerous than at any previous time, and the competition was both larger and keener and the classes more generally filled.

A welcome alteration was made in connection with the groups, which, instead of being arranged in a circle, were elliptical, the first prize being noteworthy for a triple top, in which the centre Palm was flanked by two charming *Azaleas*. In the classes generally the quality showed an advance on former years, many of the plants being immensely improved on previous displays. Probably the table decorations attracted most attention and criticism. The eight designs stretched down the greater part of the room. The premier award was to an arrangement of *Daffodils* that won on its simplicity, though many preferred a light combination of *Narcissi*, *Jonquils*, and *Lilies of the Valley*, which was placed second. Red *Azaleas*, with *Spiræas* and Guinea Grass, made a very bright third, and the fourth award consisted mainly of *Violets*, *Daffodils* and *Orchids* being fifth.

The chief competitors were Dr. W. Ford Edgelow (Mr. C. R. Powse, gardener), J. W. Kimber, Esq. (Mr. F. C. Terris), Mrs. Rawson (Mr. W. R. Satterly), Miss Lavers (Mr. G. Lee), P. W. Bushby, Esq. (Mr. F. Peacock), Mrs. R. Whitehead (Mr. G. Green), and Mrs. Hassall (Mr. W. H. Minifie, gardener). Among honorary exhibitors were J. Snelgrove, Esq. (Mr. W. Bale, gardener), Mrs. Wilson (Mr. C. B. Elliott), Miss Lavers (Mr. G. Lee), and J. W. Kimber, Esq. (Mr. F. C. Ferris). Miss Lavis' *Orchids* evidenced considerable care and attention. Mr. Snelgrove's collection was selected and arranged with great taste. The Judges were Messrs. J. D. Nanscawen, Chudleigh; D. C. Powell, Powderham; and C. Lock, Crediton. Specimens of Egyptian Papyrus,

or Paper Reed, as used by the ancient Egyptians, were shown by Mrs. Wilson. Messrs. Curtis, Sanford & Co., Ltd., had some fine *Roses*; the South Devon Fruit Farm large luscious *Strawberries* at 5s. a basket, and beautiful *Violets La France*; other nurserymen represented being Messrs. T. S. Ware, Ltd., Tottenham; Veitch & Son, Exeter; W. B. Smale, W. Allward, J. Heath, Horn & Sons and W. Burridge & Sons.

Lady MacGregor, in opening the Exhibition, said she could scarcely realise that a year had passed since she last had the pleasure of seeing their show. But the winter passed so mildly and quickly in Torquay, that spring came before they were aware of it. They all loved the spring flowers because they showed that winter was passed, and because they were distinguished for the delicious odours and delightful colours with which Nature had endowed them. She thought the greatest encouragement should be given to the Association for arranging the shows and making them so attractive.

At the luncheon the President, Dr. R. Hamilton-Ramsay, in proposing the Royal Family, said that the day-before the Princess of Wales left England for a trip in the Mediterranean she honoured their President by sending him a most magnificent photograph of herself, with an autograph letter expressing admiration for the flowers he sent her every year—her



FIG. 64.—RHODODENDRON TRIFLORUM.

favourite flower, *Lilies of the Valley*, which this year were grown by the founder of the Association, Mr. W. B. Smale, J.P., their Vice-President (applause). Mr. W. A. Masterman, in proposing "Success to the Show," said it was one of the very best they had ever had. Great credit for its success was due to Mr. Fred. C. Smale, who made one of the best Secretaries they could possibly have. Mr. Veitch, in proposing the health of the President, eulogised his services highly. Dr. Ramsay, replying, said no one could be asked to be President of that Association without being highly honoured. The admirable way in which the Committee and others worked together with the skilful whip of their Secretary assured success. He thought the Show the most beautiful he had ever seen.

BRIGHTON AND SUSSEX:

THE eighth annual show of the above Society, held in the Dome and Corn Exchange last week, was a great success. Through being a fortnight earlier than usual, *Cinerarias*, *Roses*, *Auriculas*, *Azaleas*, and *Pelargoniums* were not shown to the best advantage, but, on the other hand, *Hyacinths*, *Tulips*, and *Narcissus* were much better than usual.

Groups are always good at Brighton, and in the open class, 13 feet by 8 feet 6 inches, the first prize was awarded to Mr. E. Meachen, gardener to Mrs. Armstrong, Woodslee, Withdeane, for a very light, bright, and attractive arrangement of foliage and flowering plants. Mr. J. Hill, gardener to Clarkson Wallis, Esq., Springfield, Withdeane, was second; and Mr. G. Miles, nurseryman, third. In the second division, for gentlemen's gardeners and amateurs, 10 feet by 6 feet, Mr. W. E. Anderson, gardener to B. Parish, Esq., Preston Park, was placed first with a taste fully arranged group; and Mr. G. Simms, gardener to J. B. Cattle, Esq., Dyke Road, Brighton, second. Tables of plants arranged for effect made an attractive display. In the open class Mr. G. Miles was first with a neat arrangement of *Lily of the Valley*, *Hyacinths*, *Primulas*, *Imantophyllums*, with small *Crotons*, *Aralias*, *Dracænas*, *Ferns*, &c. Mr. B. Lister, gardener to E. A. Willis, Esq., Brighton, second; and Mr. W. Goodliffe, florist,

Worthing, third. In the smaller class for gardeners and amateurs the successful exhibitors were Messrs. A. J. Blake, W. E. Anderson, and L. Wickens respectively.

Hyacinths made a good display. For twelve plants, not less than six varieties, Mr. A. E. Golding, gardener to Mr. H. St. George Voutes, Brighton, was first with Charles Dickens (pink) (2), Alba Superbissima (2), La Grandesse (2), Queen of the Blues (2), Grand Lilas, Lord Macaulay, Baron Van Tuyll, and King of the Blues; second, Mr. J. Harper, gardener to E. A. Tucker, Esq., Preston; third, Mr. W. Goodliffe. For six distinct, first, Mr. B. Lister; second, Mr. F. Rapley.

Tulips, twelve pots.—First, Mr. W. E. Anderson, with Joost Van Vondel, Thomas Moore, Duchesse de Parme (2), Keizers Kroon, Cottage Maid, White Pottbakker (2), Proserpine, Van der Neer (2), and Bronze King; second, Mr. J. Harper; third, Mr. J. Hill. For six pots.—First, Mr. B. Meachen; second, L. Wickens.

Narcissus were good. For twelve pots, not to include Polyanthus varieties.—First, Mr. J. Harper, with Horsefieldi (2), Figaro, Sir Watkin (2), Emperor (2), Frank Miles, Empress (2), Cynosure, and Barri Conspectus; second, Mr. C. Smith, nurseryman. For twelve pots of Polyanthus varieties Mr. J. Harper was again first, Mr. A. E. Golding second. For six pots any varieties.—First, Mr. W. E. Anderson; second, Mr. B. Lister.

Cinerarias.—Mr. Jas. Pearl, gardener to R. Y. Bevan, Esq., Witheane, was first for twelve with plants scarcely at their best; second, Mr. E. Meachen. Mr. G. Simms was first for six plants, the best in the show, and Mr. J. Hill second. Lily of the Valley and Spiræas were well shown. With the former Messrs. W. Miles & Co. secured the first prize in the open class, and Mr. E. Meachen in the class for gardeners; in the latter the Brighton Florist Stores were first in the open division, and Mr. B. Lister in the gardeners' section. Callas made a fine display at the end of the Corn Exchange, Mr. Anderson taking first for six with remarkably fine well bloomed plants in 10-inch pots; second, Mr. B. Lister; third, Mr. J. Harper. Mr. E. Meachen was first for nine Azaleas, distinct, also for six well flowered Deutzia gracilis, and six pots of Solomon's Seal. Mr. C. Murrell, gardener to Mrs. Jenkins, Franklands, was first for twelve Cyclamens, really grand plants, and Mr. H. Head, nurseryman, first for twelve Genistas, well grown plants, in 8-inch pots.

For a table of Orchids arranged with Ferns Mr. Goodliffe was placed first with a tastefully arranged display, consisting of Dendrobium fimbriatum oculatum, D. nobilis, Cattleya Trianae, Odontoglossums, Cypripediums, and others; second, Mr. H. Garnett, gardener to R. Fletcher, Esq., Mount Harry, Brighton, whose collection included fine plants of Cattleya Trianae, Odontoglossum crispum, O. Andersonianum, Cypripedium Bovali, and Dendrobium nobilis; third, Mr. J. Harper.

Cut flowers were not numerous. For twelve varieties Mr. H. Garnett was first, consisting principally of Orchids. Second, Mr. J. Harper, who also took first for cut Narcissus. Miss M. Baldock was first for table decorations with a light arrangement of Miss Jolliffe Carnations, Lily of the Valley, and Narcissus poeticus ornatus, with Ferns and Caladium argyrites. Second, Mr. E. Meachen; third, Mr. F. Rapley.

Silver-gilt medals were granted to Messrs. Balchin & Son and Messrs. Boldock and Croysdel for valuable non-competitive exhibits, and silver medals to Messrs. Webb & Sons, Stourbridge, for a collection of Cinerarias, well bloomed plants of a good strain, and a large collection of Hyacinths; to Messrs. Cutbush & Sons, Highgate; Mr. W. Goodliffe, Worthing; and Mr. A. Kemp, Coothurst, Horsham, for a fine collection of Alicante Grapes, twenty-five dishes of remarkably well kept Apples, also twenty-five varieties of Potatoes, clean and even tubers.

THE YOUNG GARDENERS' DOMAIN.

SEAKALE.

AFTER reading Mr. D. Thomson's remarks on page 202, I must confess that we young gardeners have "almost entirely ignored" the kitchen garden department. I am therefore sending a few remarks on the cultivation of Seakale, which I think I may safely say is one of the most highly appreciated winter vegetables. It is of extremely easy culture, as given strong land, well manured and fully exposed to the sun, satisfactory results may be expected.

The best time to plant Seakale is during the month of March, in ground that has been trenched two spits deep, and has had a layer of manure placed between the spits. As strong plants, when in full growth, take up a considerable amount of space, they should be planted from 2 to 2½ feet asunder in rows 1 foot 9 inches to 2 feet apart. The crowns must be buried about 2 inches below the surface. When the roots are growing, care should be taken to remove all flowering shoots, as these, if allowed to remain, will prejudice the crop of the following season. The growth may be materially helped by the use of liquid manure or good mulchings of manure during the growing season. In the autumn when the leaves decay they must be removed at once, and the plot be kept free from weeds and rubbish. Later the crowns ought to be covered with a ridge of leaves weighted with a sprinkling of soil, to prevent them being blown away by the wind.

At the proper time place Seakale pots or boxes over the crowns, and cover these with leaves or straw to encourage an early start. The plants must be kept perfectly dark, or the Seakale will be improperly blanched. Under this system when ready for use it will be found far better than if the plants had been lifted and forced, inside. When all the growth has been cut from a crown, remove the pot or box, and apply a covering of leaves or straw for protection.

If Seakale must be forced quickly, lift a number of roots, and put them in pots in soil or leaves in a temperature of from 55° to 60°, keeping perfectly dark. After the roots have been forced inside they will be of little further use, and should be thrown away. I may state that in the Seakale plantation the spaces between the rows can be used to advantage for Lettuce, Radish, or some such quick growing crops.—ONE OF THE YOUNG SCHOOL.

FRENCH BEANS.

FRENCH Beans constitute one of the most valuable vegetables in cultivation if obtained early, and they are well worthy of a few cultural notes. For the earliest crops seeds must be sown in 8-inch pots, but later in the year they can be grown in beds in heated frames until it is safe to sow out of doors. At the beginning of the year the earliest should be sown in clean and well-drained pots, with a little soot spread on the crocks to prevent the ingress of worms.

Place from ten to twelve beans in each pot, using a compost of three parts loam cut up roughly, and one part sweet horse droppings, with a little old mortar rubble and wood ashes incorporated, making it firm in the pots with a rammer, covering the seeds about half an inch. Give a good watering, and afford them a temperature of 60° to 65° at night, 65° to 70° by day, keeping the pots as near the glass as possible. Very little water will be required until the Beans appear above the surface, and then it should be carefully afforded. Syringe the plants in the morning and at midday when the weather is bright, and it will be found beneficial to them if some weak liquid manure is syringed between the pots two or three times daily. A little thinning will be required, leaving about eight plants in each pot, as abundance of air is essential to success. It will be necessary to stake the plants to prevent them falling down over the pots, and pieces of old birch broom will be found suitable for the purpose.

When the plants come into bloom keep the house somewhat drier, and give the pots a little shake about midday. Apply weak liquid manure when the Beans are set, increasing its strength gradually. Treating them in this manner they can be obtained fit for use from seven to eight weeks from the time of insertion, and fortnightly sowings can be made for succession.

As the days get longer and the sun gains power the seeds may be sown in heated frames in rows 18 inches asunder and an inch in depth. Do not sow too thickly, and give a thorough watering, treating in the same manner as stated for pot work. For outdoor crops the ground should be well manured and deeply dug at the beginning of winter, so that the frost can get well into it. The end of April or the beginning of May is a safe time for sowing. Have the rows 2 feet apart, and cover the seeds about an inch. After the plants appear above the surface and the rows can be distinctly seen, hoe between them to destroy any weeds that are coming up, and loosen the surface soil. If the weather become very hot an occasional watering will be of material benefit to the plants. Gather the pods as they become large enough, as if the seeds swell in them flowering will cease—P. R.

DECORATIVE CHRYSANTHEMUMS.

MUCH time and interest are centred on Chrysanthemums for exhibition purposes, but it must not be forgotten that the decorative section renders invaluable service throughout the winter months. The plants are indispensable for the supply of cut bloom, and provide unsurpassed brightness in the conservatory. It is not my intention to give a list of varieties, as this would be a difficult task considering all those now in cultivation, while tastes differ so much that individual selection is the most satisfactory.

To obtain the best results the cultural conditions must be strictly regarded. Propagation by this time being completed, we may assume that the plants are rooting well in small pots, and as it is requisite to have plants of bushy form, it is advisable to stop them without delay, thus allowing sufficient time to overcome this check before being placed in 6-inch pots. Pinching must be completed in three operations, the last being in the second week of June, but for later display a little postponement beyond that date will be advantageous.

After the plants are placed in 32-pots there must be ample ventilation in the frames, removing the lights on favourable occasions, so as to induce sturdiness and insure sufficient hardening to place the stocks in a sheltered position out of doors about the middle of April, where they may remain until the final potting. A substantial compost must be employed at this stage, consisting of three parts of fibrous loam, one part each of leaf mould and partly spent horse droppings, with half a part each of wood ashes and old mortar rubble, good road grit or silver sand completing the mixture, though a 48-potful of half inch bones or bonemeal to a wheelbarrow of soil is often added. After the final potting a more open situation is needed, exposing them to full sunshine, as well-ripened wood is essential. Attention must be paid to staking and tying.

With the abundance of growth, coupled with vigorous root action, feeding is absolutely necessary. Liquid manure from the farmyard and soot water are the safest at the outset, varying the foods according to convenience as progress is made. A good plan is to apply, when there is evidence of a steady rain, a dusting of soot over the surface of the soil, or a top-dressing of a well recommended artificial manure, as such will prove of great benefit.

Insect pests are at all times troublesome, the tobacco puff being of immense service for the destruction of green or black fly infesting the points, and occasionally syringing with quassia will frustrate their ravages to a large extent. Flowers of sulphur must be used if mildew appear, dusting freely into the middle of the plants. Remove all decaying leaves to arrest the spread of this enemy.—F. W. G.



HARDY FRUIT GARDEN.

Grafting Fruit Trees.—The most suitable period for grafting is when the sap has risen in the stocks, causing growth to commence. It is then certain that the sap will continue active, and under favourable conditions the success of the operation of grafting will be assured.

Forms of Grafting.—The most common forms of grafting are the side or whip grafting for young stocks, and the crown or rind grafting for stocks over an inch in diameter.

Side or Whip Grafting.—With this form of grafting the stock is worked very low. Select a point where the bark is very smooth, and as near to the ground as possible. Cut off the head of the stock in a slanting direction, making a clean cut about 3 inches long. Side or whip grafting necessitates that the scion should be of the same thickness as the stock; therefore, suitable healthy growth of last year should be selected. It must be about 6 or 8 inches in length and have quite dormant buds, which means that the sap in the scions is practically inactive. The buds, too, must be wood buds. In preparing the scions select that part on each shoot where four of the best buds are situated. This is usually the central part, where the shoot is straight, the buds ripe and bold, and the wood firm. Make a slanting cut downwards in the scion of the same length as that in the stock. Unite both closely and evenly and secure firmly. Cover the parts with clay or grafting wax, and soil may be heaped round if the working is carried out close to the ground.

Crown or Rind Grafting.—Large old trees headed down some time ago may now have a fresh slice taken off in readiness for grafting. It is an excellent method of placing good varieties on clean healthy stocks. The bark must be smooth. Select well-ripened, short-jointed scions, cut from the central parts of last season's shoots. Four buds ought to be present on each. Make a slit downwards in the bark of the stock, just through the bark. Cut the scion the same length as the slit in the stock, making a clean slanting cut downwards; and at the upper edge form a small shoulder for resting upon the stock, which will keep it securely in position. Insert the scions carefully, and work them into position until the shoulder rests upon the flat surface of the stock. Several scions may be placed on large branches, and the lot tied in together, using some soft ligature. The parts must meet as exactly as possible, in order that a good union may be effected. Cover all the joinings with grafting wax, also the top of the stock, so that air will be excluded and the parts kept moist. The retention of moisture about the parts is facilitated if moss is tied round and occasionally wetted.

Grafting Wax.—As a rule grafting wax should be used warm. One part each of resin and yellow wax should be melted in an earthen pot over a fire and used warm, but not hot so as to injure the bark. Wax which may be used cold is very convenient and is made as follows:—1 lb. each of yellow wax and turpentine; $\frac{1}{2}$ lb. of Burgundy pitch, and $\frac{1}{2}$ lb. of mutton suet. Melt and mix thoroughly, allowing to cool. It is best formed into small balls to be handy for use.

Watering Fruit Borders.—The soil of the borders close to the wall in which fruit trees are growing, especially Peaches, Nectarines, Apricots, Cherries, and Plums, is often much drier in spring than it ought to be, hence it is not surprising that later on insects will abound, including the numerous species of the aphid family and red spider. These do immense damage and cripple the foliage, so that it cannot perform its functions of building up the buds for next season. Examination of the borders ought occasionally to be made, winter as well as summer, and in mild periods during the former season water and liquid manure may be freely applied. At the present time a copious supply of clear water to the borders that are at all dry, would be extremely beneficial. Unless the surface is full of roots the top layer of soil may be removed down to the roots, so that a fair sized dish is formed which will hold plenty of water. Fill this several times with clear water, and afterwards with liquid manure. Close to the wall must necessarily be the driest part, so water should reach there freely.

Top dressing Wall Trees.—After well moistening at the roots the soil must be returned, but if that removed was poor and exhausted it will be desirable to supply fresh material. For stone fruit trees make up a compost consisting of substantial loam, adding one-fifth of wood ashes, a good sprinkling of crushed mortar rubbish and crushed bones. Mix thoroughly and place firmly over the roots as far as they extend. Manure, even if well decomposed, should be used sparingly in the preparation of any compost. A little will improve poor loam, and benefit old trees which require stimulating. The growth of young trees, however, needs subduing, and not increasing by manure in the soil. It is safe to apply a rich compost over the roots of heavily cropping Apples and Pears, or where the growth is weakly and requires to be improved.

Strawberries.—Strawberries may yet be planted, but strong plants should be placed out, if possible with balls of soil attached to the roots. Those which are not thus furnished must have the roots spread out in the soil. Plant in firm ground, give water in dry weather, and mulch lightly. A dressing of soot, a peck to the rod, may now be given to fruiting plants two or three years old. After that application give a mulching of rich manure between the plants. A mixture of long and short manure combined is the best.

FRUIT FORCING.

Cucumbers.—Shade will be necessary from bright sun during the prevalence of keen northerly winds, as air can only be given very moderately. The shading, however, should only be used for a few hours at the hottest part of the day, and only sufficient to prevent flagging. Assist plants in full bearing with applications of weak tepid liquid manure, and add fresh warmed soil to the beds occasionally. Thin out the exhausted growths of plants that have been in bearing some time, and encourage fresh bearing shoots. Damp the floor in the morning between seven and eight o'clock, and again in the afternoon about three o'clock, syringing the foliage gently on warm afternoons, and keep liquid manure in the evaporation troughs. Attend to stopping, thinning and training at least once a week. Maintain a night temperature of 70° to 75°; by day, 80° to 90° with sun, and close sufficiently early to maintain the latter degree, or even rise to 95° or 100°, with an abundance of atmospheric moisture.

Pits and Frames.—Maintain the requisite heat by renewing the linings. Train the growths rather thinly, pegging them down as required, and stop one joint beyond the show for fruit, or the leading growths 12 to 18 inches from the sides of the frame. Add fresh warmed soil to the ridges or hillocks as the roots extend. Be moderate in the application of water, as the nights are cold, and employ thick night coverings. Admit a little air early, so as to have the foliage dry before the sun acts powerfully upon it. The heat through the day may range from 80° to 90° with sun. Close early in the afternoon, no harm accruing if the temperature rise to 90° or even 100°, provided there is no rank steam. If there is danger from it admit a little air constantly, a small opening being sufficient to allow it to escape.

Peaches and Nectarines.—*Earliest Forced Houses.*—The very early varieties will soon give indications of ripening, when syringing must cease, and the leaves that shade the fruit should be drawn aside, raising the fruit, if necessary, on laths placed across the trellis wires, so that its apex will be directly to the light. Do not hurry successional varieties during the stoning process, but continue the temperature at 60° to 65° at night, 70° to 75° by day with sun heat, and 65° by day in dull weather, avoiding sudden fluctuations and depressions. Tie the shoots to the trellis as they advance, and regulate the growths for future bearing so as not to have them too crowded. Shoots disposed to grow more than 14 inches may have the points pinched off, but extensions should be trained in their full length. When the stoning is over the crop will require thinning for the final swelling. Very vigorous trees may be allowed to carry more than one fruit to each square foot of trellis, while weaker trees should not be permitted to bear so many. Supply liquid manure to weakly trees, the inside border in any case being kept properly watered, mulching the surface with a little decayed manure. This will secure uniform moisture, and favour the surface roots.

Trees Started at the New Year.—The fruit should be regulated to a few more than will be required for the crop. Avoid sudden checks by judicious ventilation, cold air and a light temperature at night proving fatal to the fruit stoning. A night temperature of 60° to 65°, 5° less on cold nights, and 65° by day in dull weather, with 70° to 75° from sun heat, is quite sufficient. Of course the temperature will run higher on bright days, but let it be with full ventilation.

Trees Started Early in February.—Syringe the trees occasionally in dull weather, and twice a day in bright, but avoid heavy syringings, especially late in the afternoon, as the water remaining long on the foliage interferes with the elaborating functions, and may destroy the tissues. Allow a night temperature of 55° to 60° in mild weather, ventilating from 65°, permitting an advance to 70° or 75° from sun heat, but with full ventilation. Attend to disbudding, and follow it up day by day until all the shoots not required for future bearing or the extension of the trees are removed. A shoot must be left at the base of those now bearing, and another on a level with or above the fruit. If the latter is not required for extension it should be stopped at a few joints of growth. In the case of trees not full grown it will be necessary to have shoots about 15 inches apart, calculating from the base of the last year's growth, to form the bearing shoots of next year, the terminals being trained in their full length as space permits. Avoid crowding the growths, as they become weak and unfruitful. Commence thinning the fruits when they start swelling. Laying in the shoots requires to be done early and carefully, so as not to bring them down too sharply, yet it is necessary for giving the right direction to the growths, and in securing the shoots to the trellis space must be left for their swelling.

Trees Started in March.—While the trees are in blossom it is not advisable to syringe them, but a genial condition of the atmosphere may be secured by damping the paths and borders in the morning and early afternoon. Prevent a vitiated atmosphere by providing a little air constantly through the top ventilators. Maintain the night temperature at 50°, falling 5° through the night in severe weather, 50° to 55° by day, and 65° from sun heat.

Latest Houses.—The blossoms being abundant remove those on the under side of the shoots. Shake the trees daily from the first pollen ripening until the last of the blossom requires attention, selecting the early part of fine days. When artificial impregnation is resorted to it is a good plan to dust every blossom, when the pollen is ripe, with a camel's-hair brush, a feather, rabbit's tail mounted on a stick, or small plume of Pampas Grass. Any trees deficient of pollen should have it taken from those affording some plentifully, such as the small-flowered varieties—Royal George and Elruge Nectarine. Maintain the temperature at 40° or 45° at night, 50° to 55° by day, in all cases accompanied by slight

ventilation at the top of the house, which must be increased when the temperature reaches 50°, and full at 65°.

Unheated Houses.—The trees are coming into blossom. Ventilate the house at 50°, and do not permit an advance above 65° without full ventilation top and bottom, and close the house at 50° in mild weather, but when there is a prospect of frost at night close at 65°, leaving a little air to allow of moisture escaping. In mild weather leave the ventilators open constantly when the temperature exceeds 50°. Remove the blossom on the under side of the shoots where there is a superabundance. See that the borders are in a proper state of moisture, supplying water as required or liquid manure to weakly trees.

THE BEE-KEEPER.

THE WEATHER.

BEES, as well as vegetation, have received a serious check, owing to the sudden change that has taken place in the weather. The extreme mildness of the past winter had enabled bees to commence breeding at an early date, and the brood nest was enlarged more than is usual at the present time. Now all is changed; a severe frost, followed by a heavy fall of snow, has been general throughout the country. In a sheltered spot near our apiary 13° of frost have been registered. At the time of writing the ground is covered to the depth of several inches with snow, and this will have the effect of protecting vegetation, which had already become very forward.

In all cases where the hives are now covered with snow, it will be advisable to clear it away from the roofs as well as the entrances. If at midwinter there is a prolonged frost, it is advisable to allow the snow to remain on the roofs, as it forms a warm covering so long as the weather is dry; but at this season the sun increases in power daily, which will have the effect of partially melting the snow, and if there is a weak place in the roof, moisture will penetrate into the interior of the hive. If not already done, the entrance should be reduced to half an inch. It is also an advantage to shade the entrance so long as snow is on the ground. A piece of wood or slate placed in a slanting position on the alighting board, so as to prevent the rays of the sun striking directly on the entrance, will answer the purpose admirably, and will be the means of preventing the bees from being attracted by the glittering snow, and thus becoming numbed, and unable to return to their hive. It is hoped, however, that by the time these lines appear the snow will have departed.

Bees should not be uncovered or handled whilst a low temperature prevails, as they will be warmly clustered in the middle of the hive, and if they have ample stores the brood will not become chilled. Directly, however, a change takes place in the weather no time should be lost in seeing that all are well supplied with stores according to advice given in previous notes.

PACKING BEES.

Bees are often sent from one part of the country to the other, and when in straw skeps they may be packed with very little trouble. In the case of old stocks the present is the best time in the year to carry out this operation, because the bees at this season ought to be fairly numerous, but not unduly so; there will be a small quantity of brood, but not sufficient to become damaged in transit, and owing to the paucity of bees, and a comparatively low temperature, they will not become so excited as when the hive is overflowing with them and a high temperature prevails. But whether a stock is weak or strong, the same care is necessary to insure free ventilation. This can only be done by packing the skep bottom upward. If sticks were not placed across the skep when the bees were put in it, one at least must be driven through the side of the skep about 3 inches from the bottom, and forced through the combs until it passes through the other side of the skep. This will hold the combs in position and prevent breaking in transit.

Invert the skep and place a piece of cheese cloth or some other open material over it. This should be securely tied with small string round the outside. Now have twelve strong laths cut the same depth and breadth as the skep. Nail them together so as to form a skeleton box. Cross them at the bottom and also at the top, and place the inverted skep inside. The ends of the laths should be nailed, and round the whole a piece of cord ought to be tied to carry it by. The skep will thus travel upside down, and should they remain in this position for several days the bees will be found to be in good condition at the end of their journey.—AN ENGLISH BEE-KEEPER.

ABUTILONS.—These plants may be grown from seed, and the plants will in due course flower freely. Sow in pot of light sandy soil at the present time in a greenhouse temperature. When the seedlings have attained to the height of an inch, prick them out in other pots. The next move must be to small pots, transferring afterwards into larger pots.—S.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Mushroom Spawn (H. E. C.).—The spawn has, as you say, a stale mouldy appearance, and not that aroma of Mushrooms, which we like to find in all samples, as indicating freshness and life. The threads or mycelia, however, appear alive, and though the older or larger may not further develop, the fine threads would probably do so. Still we should have liked the bricks fresher, though we cannot go so far as to condemn them. We have found it an excellent practice to test the bricks or spawn in all cases of doubt by making up a slight hotbed of the prepared material, and spawn it in due course, when if the spawn be good it will lay hold of the fresh material in a few days, and the spawn can be used with confidence; or if, on the other hand, the spawn dies, as it certainly will if too old, the bricks can be discarded as worthless, and trouble avoided. We always make a rule of getting a forecast of the crop in the smell of the bricks. If they have a very decided Mushroom odour the spawn is quite fresh, and only needs opportunity to develop, and produce under good management an abundant crop of Mushrooms. If there is not more than a fusty smell, though it may produce some Mushrooms, we consider it cannot give a full crop. It is prudent to procure samples of spawn before ordering on a large scale.

Sowing Peas (O. F.).—Many Peas are sown too thickly in the drills for the development of robust, productive plants, and the rows are very often seen too close together. Given deep, rich soil that contains moisture in dry weather, good results are had by sowing bold new seeds 2 inches apart over the surface of flat drills 4 or 5 inches wide, or the width of the boot of the workman as he runs it along the drills to make an even base for the Peas to rest on. At this period of the year they may be covered about 2 inches deep, or rather more if the soil is of a light nature. As the season advances they may be covered an inch deeper with advantage. Where mice or other enemies abound Peas are often sown more closely in the drills, to allow of some being taken, yet sufficient escape to produce full rows. If practically all grow under this close sowing, then some of the plants should be thinned out when an inch or so high. Moistening the seeds with petroleum and dusting them while wet with powdered red lead is, however, an excellent preventive of the attacks of mice and feathered enemies. If several rows are grown on a plot of ground the distances between them should exceed the height of the varieties. Instead, for instance, of having the rows of tall Peas 3 or 4 feet apart it is much better to allow as many yards between them, cropping the wide spaces with Potatoes or other low growing vegetables. When it is convenient, some amateurs find it advantageous to have rows of Peas near the margins of the vegetable ground, or alongside the paths. The plants then, through full exposure to light and air, become short jointed for the variety, and produce more and bolder flowers and pods than they can possibly do when drawn up in a spindly manner by overcrowding. The best possible seeds of all kinds sown somewhat thinly give far better results than the cheapest possible inferior seeds sown very thickly.

Pruning Cotoneaster and Privet (Idem).—Cotoneasters only require pruning to keep them within desired bounds, and this may be done at the present time. Privet may also be pruned to any required extent now; but to keep Privet hedges in good condition, they should be neatly clipped about the middle of June, or sooner if the growth is free, and again towards the end of August. Overgrown bushes or hedges may be cut into shape any time in April.

Weevil and Maggots (Parvo).—The "beetle" is the destructive weevil *Otiorhynchus sulcatus*, and the grubs are its larvæ. These devour the roots of many kinds of plants, and the weevils eat the leaves of Vines, Ferns, Roses, and other plants. Several may be caught at night with the aid of a bull's-eye lantern suddenly turned on them. For dealing with the larvæ see reply to a correspondent on page 136, February 16th. Your letter arrives too late to be more fully answered this week.

Imported Orchids (Subscriber).—Nearly all the principal nurserymen can supply newly imported Orchids at the proper season for each species, and the following occur to us as specialists:—Messrs. Sander & Co., St. Albans, Herts, and Hugh Low & Co., Bush Hill Park, Middlesex. Messrs. Prothero & Morris are always open to buy on commission, and in your own neighbourhood you have the Leeds Orchid Company. If you are only growing six species you could not do better than choose from the deciduous group of Dendrobiums, all of which are fine for cutting for buttonholes. Six of the finest are *D. Wardianum*, *D. crassinode*, *D. Ainsworthi*, *D. Pierardi*, *D. Devonianum*, *D. Dearei*; the last is a late summer flowering species, but one of the very best. We do not undertake to reply to questions by post, and moreover, you did not enclose a stamped directed envelope.

Black Flies from Manure (T. E.).—A number, sometimes swarms, of small black flies appear from fermenting beds in houses, and they spread over the plants, no matter of what kind, in the structure. We have not found them develop into "maggots," which is the wrong way about, nor have we known the least harm accrue from them. They are only too glad to get into the fresh air; but, of course, the weather lately has been of such nature as to prevent the admission of air, hence they swarm over the plants in the house. As you have found maggots they must have come from eggs, but you neither send flies nor maggots. These may or may not be of an injurious nature, but the flies certainly succumb to fumigations, and the maggots must live on organic matter, but whether on dead or living we cannot say, yet we think you are needlessly alarmed. For destroying red spider on the Strawberries clear soot water, made from fresh soot, is excellent. Spidicide has a very decisive effect on red spider, but it can hardly be used on the fruits, and similar remarks apply to insecticides generally. A peck of soot to 30 gallons of water, stirred well every day after mixing at first, not leaving any to float on the top of the water, for four days or a week, then allowed to clear, will give a good account of the red spider, using it on the under side of the leaves, and keeping it from the fruit, as much as possible. Even syringing with clear rain water has a good effect, and is in most cases sufficient to keep the pests under.

Pruning Newly Planted Climbing Roses (Mrs. Mason).—Assuming the Roses you planted several weeks ago were dug from the open ground, the closer in reason you cut the 6 feet long stems back the better the growth will be this year, and the sooner the plants will produce the hoped-for masses of flowers. We planted some climbing Roses in the autumn. They had grown vigorously in the nursery, producing stems from 5 to 8 feet long, but the roots, in consequence of digging up the plants, were not a foot in length. To have expected such a paucity of roots to support such long stems and produce healthy growth in addition would have been futile; we therefore cut the stems down to 2 feet or less at the time of planting, and now the top buds on the shortened stems are pushing from half an inch to an inch in length. As there would be danger of these precocious growths being crippled by frosts still to come, we shall, in the course of a week or so, cut the stems back still further to bold dormant buds from 6 inches to a foot from the ground. By concentrating the root force on these few and later buds, we shall expect them to produce strong growths during the season, whereas had the last year's stems been left their full length, as yours are now, puny growths, or none, would have been the result. It is not necessary to cut back so closely Roses that have been grown in pots for a season, because practically all the roots can be preserved when planting, but even then cutting back some of the stems rather closely is in most cases advantageous.

Grass under Trees (R. L.).—Grass does not, as a rule, grow well under trees, partly from the shade and drip of these, and partly through the dryness and pooriness of the soil. We have found it an excellent plan to give the ground under trees a good dressing of a mixture in equal parts, by measure, of air-slaked chalk lime, soot, and wood ashes, applying a peck of the mixture per rod (30½ square yards), and afterwards placing on a light dressing of rich compost, not much, but just sufficient to lightly cover the ground, and admit of raking without leaving a soily appearance. The lime, soot, and wood ash mixture is best given in February, also the top-dressing of rich compost, such as rubbish heap débris, leaf mould, thoroughly decayed manure, or a mixture of the three, in March, raking well, and at the end of the month or early in April sowing on it grasses that succeed fairly well in the shade, such as *Poa nemoralis sempervirens*, *Festuca rubra*, and *Aira flexuosa*, with an equal proportion of *Lolium perenne*. These grasses have given fair results, and a good turf where not greatly overhung by trees. The proportions to use are equal parts by weight of the first three, say 2 lbs. each, collectively 6 lbs.; then sow separately the same weight of the *Lolium perenne* or Perennial Ryegrass, which grows quickly, "tillers" well, and protects the other grasses. Rake lightly after sowing and roll well. It is important to sow rather early and get the grasses up before the trees come into leaf. For ordinary renovation the mixture suffices for an acre; if the present grass is thin, use double the quantity, and if there is scarcely any grass, double again, or 48 lbs. of the mixture in the proportions given per acre. We have used as much as 60 lbs. per acre, and even on a small scale, to get a good turf quickly, ½ lb. per rod.

Names of Plants (J. T.).—1, *Pteris a-pericaulis tricolor*; 2, *Blechnum brasiliense*; 3, *Lomaria gibba*; 4, *Maranta (Calathca) zebrina*; 5, *Sansevieria zeylanica*; 6, next week.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne

COVENT GARDEN MARKET.—MARCH 29TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, ½ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	4 0	to 6 0	Lily of the Valley, 12 sprays	0 6	to 0 10
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs. ...	3 6	4 0	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Bouvardias, bunch ...	0 4	0 6	Narcissus, doz. bnchs. ...	1 0	2 0
Carnations, 12 blooms ...	2 0	3 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, single yellow, bel. 12 blooms ...	0 6	0 8	Pelargoniums, doz. bnchs.	6 0	10 0
Daffodils, double, bunches ...	0 4	0 6	Roses (indoor), doz. ...	2 0	3 0
Eucharis, doz. ...	2 0	3 0	„ Red, doz. ...	4 0	6 0
Freesia, doz. bnchs. ...	2 0	4 0	„ Tea, white, doz. ...	2 0	3 0
Gardenias, doz. ...	4 0	6 0	„ Yellow, doz. (Perles)	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	6 0	8 0	„ Safrano, doz. ...	2 0	2 6
Hyacinths, Roman, bunch	0 6	0 8	Smilax, bunch ...	2 0	3 0
Lilium Harrisii, 12 blooms	6 0	8 0	Tulips, bunch ...	0 6	0 8
„ longiflorum, 12 blooms	6 0	8 0	Violets doz. bunches ...	0 6	1 6
Lilac, bunch ...	3 0	4 0	„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	8 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



WHAT IS THE VALUE—

WHAT of the new bill now before Parliament relating to the adulteration of food? That certain classes of food are much adulterated is beyond question; the difficulty is to prove the adulteration and to bring the culpable person within reach of the law. It is so unfair to the public that they should lay down money (good money) for that

which is not food, or rather, even, we may go so far sometimes, and add for that which is really detrimental to the system.

The portion of the public that suffers most is that portion, as a rule, least able to defend itself—the working class and young children. In the first place the poor customer is less liable to suspect mischief; in the second place he has a wholesome awe of law courts; and in the third he would find some difficulty in knowing to whom he should make his complaint. The law is hedged about, and it is only those in the “know” who can really penetrate into the maze.

The upper classes purchase their food supplies in large quantities and from assured sources, and if they for one moment suspect they are being “done” over any particular article, they are both willing and able to defend themselves, and will get at the reason “why.” Milk is an article that lends itself to adulteration—the process is so easy, detection so uncertain. We are happily past the days when chalk and brains and other delightful compositions might be found at the bottom of the milk can, but we are still open to other ingredients, which certainly are not what we expect we have paid for in the milk bill.

How can we increase our quantity of new milk without the addition of fresh cows in the dairy. Our cows, with judicious feeding, are doing their very best, the quantity is large, and the quality—i.e., the butter fat, is equal to, or rather above the average, the average being 3.75 to 4 per cent.; Jerseys will reach 5 per cent. Yet we want more. Naturally our customers desire at times several quarts over their usual order, and we are perplexed as to how to provide them with it.

Now comes in science to our help. We have an excess of butter fat, the accepted standard is 3 per cent. Our percentage is from 3.75 to 4 per cent., so as to have something in hand to work upon. Now comes into play the useful separator. The milk is warm, and being mixed up with the “real new” does not in colour or temperature betray itself; the flavour is distinctly different from skim milk that has had to stand, and age diminishes its pleasant properties. Now, no analyst can stand against this sort of fraud, and fraud it is. The only way to catch such vendors is to follow them to the mixing shed, and this is practically impossible. The new Act would allow the seller to add a little colouring matter provided it was not injurious; the same latitude is permitted in the matter of preservatives. Well, that may be all right, but we do not care to take ourselves and to put in our young children's food certain drugs which may or may not be undesirable. We would rather have the milk pure; if we want preservatives, let us add them ourselves, and in the quantities we think desirable.

How are we to know where this preservative business stops? We read of the farmer adding a mixture at the rate of 1 pint per churn, and then who knows how much more may be added by the retailer, and how much by the consumer? In the end it may be very heavily preserved and totally unfit for the delicate stomach of a baby or of the sufferer from dyspepsia. Boric acid seems to be the principal agent, and yet it is counted as not injurious here in enlightened England. Germany and Holland have forbidden its use in articles for home consumption.

What about the margarine business? It appears margarine may lawfully contain 10 per cent. of butter fat. Well, we have no fault to find with that. What we dislike is the butter which is impregnated with margarine, and it can be done, and to a great extent, without the slightest suspicion being aroused in the breast (or stomach) of the consumer. It is a punishable offence *if detected*, but who is to detect it? It would be very much after a case we heard of some years ago, when a seed crusher declared it lay in his power to grind up any substance to such an impalpable powder as to entirely defy detection. We must have margarine with a distinguishing colour, or the manufacture must be carried on in buildings open to government inspection.

It is all very well marking in large letters the paper wrappers; it is all very well appending name and address to milk cans and “separated” or skim milk to utensils containing those ingredients,

but still the public has much left in its own hands, and until there has been some swinging convictions and heavy fines the unjust vendor will but laugh in his sleeve, and pocket his gains.

The “Sheffield Evening Star” for March 17th says:—

Mr. Walter Long will not be allowed to conduct the Food and Drugs Bill through Committee without much discussion. Notice has already been given of nine big pages of amendments, and there is plenty of time for additions to the number.

WORK ON THE HOME FARM.

Farmers who have hurried on and almost, if not altogether, completed the spring sowings, will be chuckling at the forward position of their work now that winter has made a serious re-appearance.

The check, though to some people inopportune, can but be temporary with April so near, and with true April weather, the early-sown grain should do well, for this frost will prevent its getting too forward. The same may be said as regards fruit trees, which would soon have been in bloom, and therefore running great risk of injury from late frosts.

Wheat looks well, and is not losing root as it so often does; it is quite forward enough, and in some fields the plant is almost too thick; the prospect of a crop is decidedly good, but prices keep very unsatisfactory, with little hope of improvement.

The cold snap has had a weakening influence on stock markets, for roots are very scarce, and too many farmers have nothing now but pastures to depend on. Happy is the man who has a good heap of Mangold, with sufficient grass whereon to consume it, and so keep his sheep away from the young seeds until frost is past for the season.

Swedes are nearly finished, and in one way it is a good thing, for being small in the autumn, they were not stored, but allowed further opportunity for growth. They certainly gained in weight up to Christmas, but the mild winter has encouraged them to run, and the flesh has been more or less stringy and woody since mid-February. From this it appears that we should always store the Swedes for spring use, however small they may be at Martinmas.

The artificial manures, if not already bought, should be purchased at once, and immediate delivery should be insisted on. Superphosphate especially requires time to dry if recently dissolved, and where the farm is far from a station, it is bad policy to defer the carting in of the tillages until the time to sow them, for it is always a very busy one.

Land already prepared for Mangolds should not be ploughed again until just before drilling; but if the surface be a little rough, a harrowing and rolling, as soon as dry enough, will improve the mould, which will have later on to enclose the young seed. Farmers are now huying their seeds; may we urge on them the importance of buying nothing but the best?

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY				Rain.	
1899.	March.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	19	30.123	34.7	32.0	N.W.	39.5	42.4	27.9	84.6	24.1	—
Monday	20	29.784	31.9	31.2	N.	38.3	42.4	26.3	84.9	23.3	—
Tuesday	21	29.827	28.1	27.9	W.	37.7	39.0	19.9	74.1	21.4	0.023
Wednesday	22	29.698	30.8	30.8	S.W.	36.6	42.2	22.6	90.4	22.1	—
Thursday	23	29.775	28.2	27.1	N.W.	36.1	38.2	22.7	65.9	20.8	—
Friday	24	30.017	32.2	30.1	N.W.	35.3	43.7	23.9	88.9	22.0	—
Saturday	25	30.252	35.6	32.1	W.	35.2	49.4	24.3	82.0	21.8	0.194
		29.925	31.6	30.2		37.0	42.5	23.9	81.5	22.2	0.217

REMARKS.

19th.—Bright and generally sunny.
20th.—Clear early, alternate cloud and sun after, with frequent sprinkles of snow in afternoon.
21st.—Foggy early; fair, with much faint sunshine till noon, then snow till 4 P.M. and fine again after. The grass min. thermometer was slightly covered with snow.
22nd.—Bright morning, cloudy at times in afternoon.
23rd.—Overcast, with frequent slight snow, sleet, and soft hail till 1 P.M. then generally sunny.
24th.—Brilliant morning; cloud and slight snow at 0.15 and at 1 P.M.; cloud and sunshine in afternoon; bright sun from 4 P.M.; fine night.
25th.—Overcast early; sun at 9, and cloud and sun till noon; fine rain in afternoon, and steady from 6.15 P.M. to midnight.
A very remarkable week for the latter half of March; it is the coldest since the last week in January, 1897, and the night minima are lower than in any week since the intense frost of February, 1895. Rain still very deficient.—G. J. SYMONS.

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We sell the Seed by weight, which is the only correct method of estimating quantity needed for a given space.

BARR'S "THAMES EMBANKMENT" GRASS SEEDS, for Parks, &c.—A special mixture which has been found very successful in many public and private parks and squares around London and throughout the country. Per lb., 1/3; per 10lb., 10/6; per 20lb., 20/.

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Thinner Plants for Covert Planting, &c., 2 to 3 feet, 16/-; 3 to 4 feet, 25/- per 100.

PORTUGAL LAURELS, very fine, 2 to 2½ feet, 6/-; 2½ to 3 feet, 9/- and 12/- doz.

AUCUBAS, well-coloured, well-rooted plants, mostly as wide as they are high; fine for ornamental grounds; stand well under trees; fine shrub for smoky situation, and if planted with male Aucubas beautiful for berries; 12 to 18 inches, 6/- doz.; 18 to 24 inches, 9/- doz.; 24 to 30 inches, 12/- to 18/- doz.; 30 to 36 inches, 18/- to 30/- doz.; cheaper by the 100.

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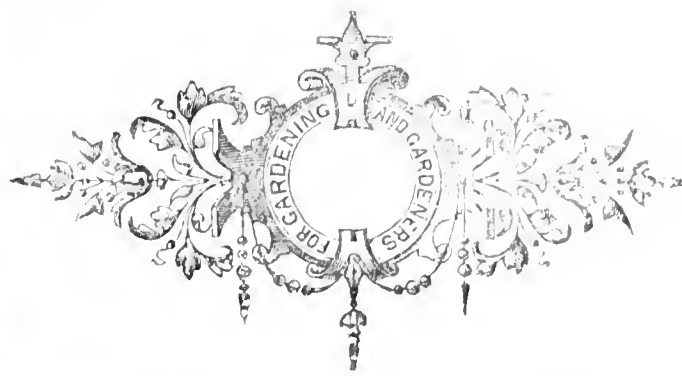
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Journal of Horticulture.

THURSDAY, APRIL 6, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

DECORATIVE HELPS.

THE ever-increasing taste for the employment of cut flowers in home decorations is often a matter of some little anxiety to the provider, not to speak of occasional heavy demands entailed by floral fêtes and flower balls, which few appear to escape. That the caring hand is apt to be a sparing hand is not a matter for surprise, and any auxiliary helps to the end, provided they are as much appreciated as their more refined relatives, are worthy of consideration. Ere advancing the claims of our wildlings, however, two phases of the subject may be adverted to, the first of which is naturalisation.

When the Lilies of Lent are "a blooming," they seem to bring with them a sense of satisfaction and relief, and happy is the man who has his borders full of them; but happier still is he who has taken heed of their adaptability for naturalisation. In deep bays of the shrubberies, in the narrow margins between the grass verge and beds of shrubs where orthodoxy clings; but, above all, where freedom reigns supreme, the Daffodil is a charming object, and, what is more to our purpose, a useful one. One looks for their coming and misses their departure. For this reason, I think, they are peculiarly adapted for permanent positions, which leave no desire to oust them from it when their glory has departed. Fortunately for the decorator the Narcissus season can be well stretched by a judicious selection of varieties suitable for planting *en masse*. From such time as *N. princeps* braves blustering March till waning May winds up the procession with the chaste Gardenia-like *N. odorata* fl. pl., these charming decorative blooms play a prominent part. But, really, it is needless to laud the Lilies of Lent, the increasing abundance of which only adds to their popularity.

Tulips are equally adapted for planting out of bounds in the sunny foreground of shrubberies, and no matter how badly treated forced Tulips may be, they well repay replanting in this way. Those who do not yet know the merits of that grand late Tulip, *T. Gesneriana*, for cutting purposes, would do well to make its acquaintance.

Flowering as it does contemporaneously with the Solomon's Seal, it associates remarkably well with it in vases, the greenery of the one and the brightness of the other being both harmonious and pleasing. The Solomon's Seal is as grand for naturalisation as it is useful for cutting, and well deserves good treatment in the way of an annual top-dressing.

With the idea not only of helping the decorator, but of sparing the hardy flower borders as much as possible, many free growing plants commend themselves for treatment as wildlings, or under semi-wild culture. The *Doronicums*, *Montbretias*, many of the *Iris* tribe, *Aquilegias*, and other kinds as equally suggestive are equally useful. That hardy flowers for decorative purposes lack some of the subtle refinement which seems an inherent quality of those produced under glass goes without saying, but a good deal lays in their arrangement. As a rule, each kind goes best with its own foliage, and mixtures are seldom pleasing combinations. For instance, the big Chinese Tree *Pæonies*, cut with plenty of stem and loosely arranged in large vases, are grand objects in a large room, and *Daffodils* are never so happily displayed as when set up with their own leaves.

Garden cultivation of the most useful plants, apart from the usual routine of the hardy borders, has much to commend it for cutting purposes. The little trouble entailed in ministering to each kind's particular requirements is amply repaid by the greater quantity and higher quality of the blooms obtained. After pressing the claims of naturalisation it may appear anomalous to promulgate the doctrine of inversion—viz., the taming of our wildlings—but from the present point of view any means to the end need not be despised. The *Chrysanthemum* of our meadows, popularly called the Ox-eye or Moon Daisy, simple and common as it undoubtedly is, deserves more than a passing notice for our purpose. In old pastures poverty is often inimical to good substantial blooms, but by transferring some roots as early in the season as procurable to a well-enriched plot the beauty and usefulness of the flowers are much increased. For table decoration the Ox-eye Daisy is, in my experience, far and away the best flower of its kind. The cultivated *Marguerites* have, when cut, a disappointing habit of reflexing into nothingness. Arrangement, however, has not a little to do with the successful employment and consequent appreciation of flowers. The same also applies to all our wildlings. Over-elaboration is fatal to effect.

If we cull wildlings from the great garden of Nature, to her must we go for the secret of that nameless grace she invests them with. For a dinner-table to be successfully decorated with, say Ox-eye Daisies, they must be lavishly employed, yet loosely arranged, without any approach to primness. If the Daisies are cut full length, some with branched, others with single stem, they may, for a centrepiece, be inserted in a bowl, or other receptacle, of wet sand, care being taken to make them stand well out round the edge, disposing them *au naturel*, without any attempt at rigid formality. Whatever vases are used as supernumeraries the Daisies will be arranged in them in a similarly careless manner. Having arranged centrepiece and vases upon the table, the effect upon a white cloth is, at least, insipid, I grant you; but the one touch of Nature is yet to come; with a handful of our tall, nodding, native grasses, the missing link is restored. Given a lofty room and a large table, on which say, three or more bowls are used down the centre, such Grasses as the drooping-headed *Bromus* may be made to tower above the flowers 2 or 3 feet, making the blooms, as it were, an undergrowth.

Similar arrangements with single red Poppies or the Corncockle for a luncheon table (the colour of this is not suitable for artificial light), are particularly effective, never producing a discordant note in that harmony of natural grace in which all floral decorations should be transposed. This is but one, although the more important side of the question, the other being the saving of time and sparing of choicer materials. Beyond a boy's time spent in gathering the wildlings, an hour is ample in which to decorate a dinner-table for twenty persons. It is needless to descant at length upon the variety of material naturally supplied from such time as early summer makes the meadows and hedgerows things of beauty till late autumn crowns the year with a galaxy of dying foliage and ripening berry. Where plants are called for to furnish fireplaces during the season, the common Water Flag, *Iris pseud-acorus*, is a capital substitute. These may be cut off at the base, selecting them of whatever lengths is deemed necessary, and when placed in pickle jars of water are easily arranged *au naturel* with a bank of moss to hide the receptacles. This wildling, for the purpose, cannot be too highly recommended; not to mention its exquisite, Orchid-like, canary-yellow blossoms, which serve for other decorative purposes.

Where such things have not been hitherto introduced employers have been found to welcome the change, not less to those who grudgingly sacrifice the objects of their skill and care upon the altar of necessity.—K., *Dublin*.

HARDY FRUIT PROSPECTS IN SOUTH WALES.

NOTWITHSTANDING the severe spell of winterly weather experienced over the greater part of the country lately, and the advanced state of the fruit buds, when the thermometer registered from 18° to 30° of frost in some places, the Apple and Pear trees here are covered with strong (apparently uninjured) flower buds, which give every promise of an abundant crop of fruit, if the flowers are not injured by frost later in the season.

Last year the Apple trees bore a heavy crop, but the fruits were much smaller than usual, and a great many dropped after swelling to a good size, owing to the long continued drought, and to the young growths of the trees being badly infested with aphids and honeydew. They were so badly blighted that I was afraid they would be crippled for a year at least. I had all the points of the infected shoots cut off and burned, and the trees syringed with a mixture of softsoap and water, after which they made clean, firm, well-ripened growths bristling with fruit buds. You see, Mr. Editor, I am still a believer in having well ripened wood (whether it be the wood of Vines, Apple, or Pear trees) to produce a good crop of fruit. And, I know, I am not singular in that respect, although a writer in "our Journal" tried hard to make us believe otherwise a few years since.

The Pear trees in the open quarters never looked better. They do not seem to have been injured in the least by the long drought of last year. Pitmaston Duchess is fuller of buds than ever I remember, and the trees are going to be one mass of flowers, and the same may be said of most of the other varieties. Some trees on the walls, however, are not quite so full of flower buds this year as usual, which I attribute to the fruit borders getting so very dry during the drought of last year. Apple trees are swelling their fruit buds fast, and, like the Pear trees, promise an abundant crop if all goes well with them during the setting period of the fruit.

Plums promise well for a crop at present; the trees in a day or two will be smothered with flowers, but it is a very uncertain crop in this district. The gardens here are in close contiguity to the town—in fact, surrounded by it; and stone fruits are more subject to the attacks of aphids and red spider than trees growing in the open country districts. I have on that account given up growing Morello and other Cherries long ago, as I found it was almost impossible to keep the trees in a clean and healthy state. Try whatever remedies I might, there was no getting rid of the pests.

Peach trees in the district around Cardiff look promising, but some of the earliest opened flowers were injured by frost, although the trees were well protected by a double thickness of fish netting. Still sufficient uninjured flower buds are left to insure a crop, if the fruits set well.

CATHAYS PARK.

The fine fruit gardens in Cathays Park containing the grand collection of specimen Apples and Pear trees which have been so much admired by gardeners and others visiting the Castle Gardens, will soon be a thing of the past. Cathays Park and fruit garden (about 60 acres in all) have been sold to the Corporation for the sum of £160,000 to build a new Town Hall, Law Courts, college, museum, and other municipal buildings thereon. The Corporation have taken possession of their purchase, and thrown the park open to the public until building operations have begun. The fruit garden, for the present, is kept in their own hands, and the trees will not be done away with until the garden is required for building. I shall try, if possible, to get a few of the Apple and Pear trees photographed before they are destroyed, to keep as a memento of what can be done in fruit culture in this country in the space of twenty years.

The trees were all planted when maidens of one year's growth from the bud on free stocks. The Pear trees in the open quarters are trained as pyramids, and the Apples in tree-bush form. A great many of the Pear trees are now from 28 to 30 feet high, well furnished from base to apex, with good fruiting branches. I have never seen such fine specimen trees anywhere as those of Pitmaston Duchess, Beurré Diel, Marie Louise, Beurré d'Amanlis, Brown Beurré, Beurré Superfin, Beurré Magnifique, and Beurré Rance, as those here.

The Pear trees on the south wall are very fine; trained in fan-shape they look well at all seasons, whether denuded of leaves, covered with flowers, or bearing heavy crops of fruit. The varieties growing on the wall are Pitmaston Duchess, Beurré d'Amanlis, Easter Beurré, Williams' Bon Chrétien, Beurré Clairgeau, Beurré Diel, Marie Louise, Beurré Bosc, Beurré d'Esperne, General Todleben, and Née Plus Meuris. The wall is from 14 to 15 feet high, and it is well furnished with healthy vigorous trees from top to bottom in a full bearing state.—A PETTIGREW, *Castle Gardens, Cardiff*.

[The trees in question are highly worthy of photographic representation and preservation. When visiting Cardiff some years ago we regarded them as splendid examples of culture, training, and productiveness.]



ODONTOGLOSSUM CRISPUM DUKE OF YORK.

ON page 232, of our issue for March 23rd, we gave an illustration of *O. c. Sultan*, as being one of the finest shown at the Drill Hall on March 14th, and we now present (fig. 65) to our readers *O. c. Duke of York*, which, though entirely different in character from *Sultan*, is nevertheless superb. As the woodcut clearly conveys to the observer, the flowers are of good shape and considerable substance. The very broad petals, with their slightly wavy margins, are white, delicately flushed, and with bright red spots of varying sizes distributed over the whole surface. The narrower sepals are very similar in colour. The splendid lip has a large patch of red within the white fimbriated margin. The exhibitor was Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, and a first-class certificate was recommended by the Orchid Committee of the Royal Horticultural Society.

CALANTHE WILLIAMSII.

It is very doubtful whether we need the deciduous *Calanthes* as late in the season as March, when many fine Orchids are to be had in plenty. The fine group recently arranged at the Drill Hall, however, showed their charm, and the species named above is equally beautiful. It has nearly pure white sepals and petals, with a crimson lip, and in strict botanical parlance is a variety of *C. Regneri*, from which it differs only in colour. The plant is very useful if a late display is needed, and it may be grown under the same conditions as *C. vestita*.

ODONTOGLOSSUM NEBULOSUM.

This species has been unusually fine I think during the present season, and I have noted freer-flowered plants and better form than I remember seeing before. It is a plant that does not get the attention its merits entitle it to, for it has a very distinct appearance, and is easily grown. In the type, which is far prettier than any of the varieties, the flowers are pure white on the sepals and petals, except at their base, where they are spotted with brown. Being a native of Mexico, and found at considerable altitude, the shady cool house, such as most *Odontogloss* like, is hardly to its taste. It can hardly be kept too cool, but it likes in addition ample light.

CYPRIPEDIUM SALLIERI HYEANUM.

I recently noted a fine form of this variety flowering from an importation of *C. insigne* in one of our largest London nurseries. I was rather glad to have further proof that this is a natural hybrid, for possibly some of our readers may remember the very oracular criticism in the "Orchid Review" of my notes on the subject in the *Journal of Horticulture* some two years ago. Possibly the criticism was "a feeler," for most of the people who hold such strong and certain views on these botanical questions are not above getting a hint from practical growers, who usually find out the truth of what they are writing before committing themselves.

But be this as it may, there can be no doubt—indeed, there was none before—that this *Cypripedium* occurs in a wild state. It is rather quaint to read that because *C. insigne* and *C. villosum* grow and are collected many miles apart, that therefore the possibility of a hybrid between them occurring is remote. Who that has handled a number of *C. insigne* has not noticed in many cases the villosum petals, with their lines of deeper colour on one side? I may say that in quite a number of cases it would be difficult indeed to say what the flower was, provided the upper sepal was taken off and only the lip and petals left. They are certainly more like villosum than insigne.

This question is something on a par with that as to whether or not Orchids change from year to year. Despite continued and well-authenticated evidence that they do, some authorities still hold that they do not, so presumably it is useless to try and persuade or convince them of the truth of what is so frequently noticed in our large nurseries. Personally, I had a very convincing experience many years ago, when I purchased at a rather high price a fine variety of *C. villosum aureum*, propagated it, and found the next time it bloomed that it had degenerated so much that I could not sell it as that variety.

Again, a fine variety of *Odontoglossum Pescatorei* flowered with me a few years since. The spike was cut and the plant very carefully grown in order to get all the strength possible into it. I got strength and a great branching spike with dozens of flowers upon it; still a good form, but nothing approaching to what it was originally. These are exceptional cases, but many instances of slighter alterations or deviations might be given, such as the habit of the labiata *Cattleyas* to

throw highly coloured forms one year, and the next to pale off considerably though grown under precisely similar conditions.—H. R. R.

LÆLIO-CATTLEYA ELEGANS.

THE earliest flowering plants of this beautiful family will be fast pushing their flower spikes, and should a moderate quantity be grown, they will make a charming display. The parentage has been settled, and the plants that have been raised in this country prove that Mr. Rolfe was correct when he asserted that *L.-C. elegans Schilleriana* was the result of a cross between *Lælia purpurata* and *Cattleya intermedia*, and I think we can take it for granted that all the white varieties are the result of this cross; and the very dark forms are the result of *L. purpurata* crossed *Cattleya guttata*, and its variety *Leopoldi*.

One often finds plants not growing satisfactorily, which is frequently caused by their having been grown too cool, as I find it progresses with the same treatment as *Cattleya gigas*, and if a plant were late in making its growth I should not hesitate to place it in the hottest house, of course removing it again as soon as the growths were completed. The plants delight in abundance of moisture both at the root



FIG. 65—ODONTOGLOSSUM CRISPUM DUKE OF YORK.

and in the atmosphere while in actual growth, but should never be syringed. Damp well between the pots or pans in which they are growing, twice or thrice a day, according to the outside conditions.

The compost must consist of the best fibrous peat, broken in rough lumps, with all the dust shaken out, mixed with about a third of good live sphagnum moss, and a few pieces of clean crocks to keep the whole open. The plants as well as the pots or pans in which they are growing must be kept scrupulously clean, as they are subject to the attacks of white scale and other insects, and a dirty plant cannot thrive.

Perhaps no plant shows much more variety in colour than this. From the pearly white sepalled and petalled *L.-C. elegans Stelzneriana*, to the amethyst purple *L.-C. e. Turneri*, there are various intermediate shades, the best of which are perhaps *alba* and *Schilleriana*. This plant was first found by François Devois in 1817, and flowered in Europe the following year, in the collection of the late M. Ambrose Verschaffelt of Ghent; since then small importations have reached this country from time to time.—J. BARKER, *Hessle*.

PINUS RIGIDA.—In regard to the name of *rigida*, the Rigid Pine, given to this species, Mr. C. F. Saunders, describing a visit in winter to the Pine Barrens of New Jersey, says in "Meehan's Monthly"—"In the white light of a January dawn, we rally forth down a frozen road of sand into the Pines. Covered with their tufted green needles, the trees stretch away on every hand in long avenues of restfulness, with bushy seedlings, like little toddling children, clinging about their feet. These are principally Pitch Pines—*Pinus rigida*—literally the Rigid Pine. How well named rigid one sees as he notices their action before a high wind. Where the White Pines would bend gracefully and toss their branches with an elastic motion, these Rigid Pines doggedly jerk backward and forward, their trunks stiff as ramrods from top to bottom, and as graceless, every branch tense and unyielding. The resistless blast forces them aside as it rushes along, but it cannot make them bow.

NOTES ON PALMS.

SOME of the popular species and varieties of these indispensable plants seem to possess the power of adapting themselves to widely different cultural treatment, for they will endure a great amount of ill-usage, not, perhaps, with impunity, but still without being killed outright. They revel in the highest temperature kept up in any hot-house as long as the atmosphere is well charged with moisture, and a few months' sojourn in a cool house in winter leaves little if any permanent effect on them, only simply retards growth for a time.

In regard to soils their adaptability is quite as great. Importations from the Continent may frequently be seen growing luxuriantly in pure leaf soil; and in this country grand specimens may be met with which have been potted in nothing but stiff loam. Between these two extremes there is usually a "golden mean" which is safe to follow, as it gives satisfactory results. A certain amount of experience is necessary in testing the soil one has at command before it is safe to use loam alone for Palms. In some districts, where free fibrous mellow loam can readily be obtained, I have found both Palms and Crotons succeed splendidly in it with no other addition than that of a little burnt refuse. In other localities—especially where the loam rests on clay—great caution is necessary in employing it exclusively for such plants, as they do not root in it readily, although they succeed fairly well when once established. Loam of this description, although it may contain a fair amount of fibre, does not possess that friable nature which cultivators like to see. When dry it is hard and lumpy. When soil of this description must perforce be used, an equal quantity of good fibrous peat and a liberal addition of sharp sand mixed with it, form a safe compost to use. Those who successfully employ heavy loam for growing Palms in are fortunately placed in being able to secure a sample which has peculiar characteristics, for although heavy its component parts are thoroughly blended, the sand and the clay being evenly distributed throughout in the right proportion to make the soil holding, yet not lumpy. In a loam of this type Kentias, Latantias, and Phoenix succeed admirably.

I remember about twenty years ago, when working in one of the great London nurseries where Palms were extensively grown, the regulation compost for Palms was peat and rather light fibrous loam in equal parts. The son of a continental nurseryman was spending some months in the nursery in order to note English methods of business and cultural practices. His idea was that our Palm compost was far too light, but the departmental foreman usually managed "to take the wind out of his sails" by pointing to the grand stock of plants of various sizes in the houses, which the precise German was bound to admit he had never seen surpassed. After having tried composts of various descriptions for *Cocos Weddelliana* I have formed the opinion that fibrous brown peat, with sand and charcoal added, is generally the most suitable soil to employ for this very graceful yet fastidious Palm. In a young state they never seem to thrive satisfactorily unless plunged in some material having a nice bottom heat, as so few roots are formed during the first six months of the plant's existence. I make a practice of transferring young plants from "thimbles" to 3½-inch pots, and then plunge again in bottom heat till roots are plentiful in the new soil. After this stage is reached the plants thrive well on an ordinary stage in a stove or forcing house. Healthy *Cocos* will bear a considerable amount of sunshine, and when shading is reduced to a minimum the fronds possess great substance.

In the case of all Palms firm potting should be practised, they then assume a good habit of growth and roots permeate the soil evenly. When repotting strong growing Palms which have forced the ball above the rim of the pot very little drainage should be used, as it is important to get them low enough in the new pots to allow space for holding water after the old ball has been covered with half an inch of soil. For 8 and 9-inch pots I have frequently employed only one large crock, this being covered with moss, and have never found that amount of drainage insufficient when careful watering was practised. Plants which have forced themselves upward in the pot invariably have a mass of strong roots at the base which form efficient drainage, as well as give vigour to growth, and it is a barbarous practice to cut such roots away to enable the plant to be lowered in the pot, and at the same time give the regulation amount of drainage.

Plenty of heat and abundance of atmospheric moisture are essential conditions to observe in Palm growing, but the practice of syringing regularly at fixed times, independent of weather, is not a good one. During dull weather the moisture ought to be applied by damping walls and stages and filling evaporating pans, syringing occasionally when the hot-water pipes become overheated, and regularly during bright weather. The midday syringing in summer time is of immense advantage, as when the house is at its highest temperature is just the time for a saturated condition of the atmosphere, yet the practice is not followed as generally as it should be.

Regularly dipping the plants in an insecticide solution helps to keep insects in check, but I have not yet been able to kill brown or

white scale with any of the advertised insecticides when used according to the directions given unless the plants are dipped while the insects are in a very young stage. Although insecticides have to a great extent done away with the tedious work of hand sponging, it is not wise to dispense with the latter operation altogether, as when well done it leaves the fronds beautifully clean and fresh, and the plants seem to thrive the better for it.—H. D.

EXPERIMENTAL HORTICULTURE.—I.

EXPERIMENT is a comprehensive term, as, though it is commonly defined as an undertaking directed to proving or disproving something already accepted or questioned, it may include every practical operation of which the result is not an absolute certainty. It may be a duly organised and intentional search for knowledge, or it may be only an accidental trial, yet in a broad sense both are experimental, though the utility of the latter may be greatly reduced from want of system. The scope of experimental work is very wide, and the demand for such research is a necessity of the times. There is an enormous and increasing competition to face with producers in other nations, and every process or method requires the closest examination or testing with a view to possible improvement.

British horticulturists deservedly occupy a foremost position as skilful cultivators, the thousands of admirably kept public and private gardens throughout the kingdom, together with the numerous exhibitions, afford ample testimony of this fact. No other country has produced so many triumphs of practical skill as the United Kingdom, yet the most experienced men will be ready to admit that even in their daily work, after, perhaps, half a century's study and practice, difficulties are constantly cropping up that are most perplexing, and which could only be solved by careful experiment.

Instances innumerable must be known to all, but a few will be mentioned which come within my own knowledge. An able gardener had charge of a place where hardy fruits were greatly prized, and there he excelled in the culture of Pears; the trees were pictures of health, they produced liberal crops of magnificent fruits; the pride of the employer and the envy of his neighbours. Over a course of years failure was unknown, and the fame of the gardener was established as a most successful cultivator. Some alteration in the establishment at last compelled the gardener to take another appointment, which he found in the same district and a short distance from the scene of his former triumphs. Pears were naturally again the object of his attention; old trees were treated and young ones planted, and the results which had hitherto attended his efforts were expected, but they did not come. The trees made poor growth, the leaves were imperfectly developed, little fruit was formed, and that often cracked or defective, everything being as unsatisfactory as it well could be. So it has continued year after year; all efforts have failed to produce the desired results; manures of many kinds have been tried, lifting, replanting, and all means that an experienced man can employ to accomplish the purpose in view. Failure of a most marked character is the only result, and now a friend writes to say that he believes these refractory Pears will send poor Mr. X. out of his mind, because he takes the matter so much to heart.

Another example of the difficulties horticulturists have to encounter is afforded by a certain establishment where, for a considerable time, strenuous efforts have been made to grow Vines that would produce Grapes fit for table. Within recent years no less than four gardeners, skilled men who have produced satisfactory Grapes elsewhere, have tried to accomplish this task, and successively failed, in precisely the same way, notwithstanding new borders and fresh plants. Up to a certain stage the Vines would flourish amazingly, then they would suddenly cease developing, and the fruit would shank to a disastrous extent. Such experiences come within the scope of many practitioners, and even market growers do not escape, for I know men whose losses would have to be reckoned by thousands of pounds, and yet all their skill, experience, and abundant pecuniary means have failed to enable them to effectually prevent such losses or to combat the difficulties successfully when they come.

Even amongst vegetables you have all known instances where success in one place has been followed by failure in another or *vice versa*, and I remember some years ago an example in the case of an excellent variety of Pea which in the same hands was a remarkable success in one place and as great a repeated failure in another. With some plants under glass similar results are frequently experienced, and especially is this the case with certain Orchids, of which abundant examples could be given; but what has been said will be enough to illustrate the point to which I wished to draw attention—namely, that with all the skill employed in British horticulture and the successful results generally, there is still much that demands research, and it is there that experimental work can perform a useful service. In the great subject of manures alone there is ample room for most useful work that would be of service to thousands.

FOREIGN EXPERIMENTAL WORK.

The necessity for such work in connection with agriculture has long been recognised, and in some cases horticulture is now included. In the United States of America an excellent system has been developed, chiefly at the national expense. No less than fifty-five experimental stations are now in operation there, in the majority of which are departments for agricultural and horticultural research, and reports of the work done are prepared for general distribution. Then there is a head-quarters, the office of experiment stations, under the direction of Dr. A. C. True, and there a digest is produced of all the work, and issued monthly in the *Experimental Station Record*. One of the recent annual volumes of this useful work comprises over 1000 pages, giving abstracts of 267 bulletins and forty-three annual reports, besides 227 abstracts of reports from foreign investigations, special articles of importance by foreign workers being translated and published entire in the *Record*. The whole of the information is most laboriously classified and indexed, so that it is readily accessible to all. Besides this the *Record* is distributed gratuitously to workers both in the United States and elsewhere, the nation defraying the postage. Our American cousins believe in doing things on a colossal scale, and certainly their organisation in connection with experimental work is highly creditable to them as a nation and an example for the whole world.

After an examination of the stations the Secretary of Agriculture reported as follows:—"In a general way it may be said that the investigation of the work clearly indicates that even the poorest of our stations have done scientific work of practical benefit to their communities, and that in many cases the services the stations have already rendered have been of great value, far surpassing in the aggregate the total amount of expenditure made for them by the National Government. The greatest hindrances to successful work have arisen in those communities which have failed to appreciate the fact that the stations are primarily scientific institutions, and that while they should always keep steadily in view the practical results to be obtained, they render the most permanent benefits when they make thorough scientific investigations of problems underlying successful agriculture and horticulture." In concluding, the same writer draws attention to a matter of great consequence. "The importance of adopting definite lines of work and sticking to them until definite results have been obtained is strongly urged."

I will next refer to experimental stations in Germany, France, and Britain.—R. LEWIS CASTLE.

CULTURE OF ADIANTUM CUNEATUM.

Few, if any, Ferns enjoy more popularity than the Maidenhair (*Adiantum cuneatum*). It is a Fern which is easily grown, and succeeds in structures of different temperatures, though it grows best and makes the finest specimens in a stove or intermediate temperature. It grows well in a greenhouse in summer, and lasts well throughout the autumn and winter, but as a rule the plants are shabby in spring, and late in starting into growth. The system of culture adapted for a stove could not be carried out with the greenhouse plants, because it would be too early to divide and repot plants to be grown. However, the compost, method of dividing and repotting, shading, and watering, are the same, but carried out at different periods. Stove plants may be repotted, divided, and potted or shifted from small pots into larger, as early as February. In an intermediate temperature March is early enough, while for those grown in a greenhouse April will be more suitable.

Before commencing to pot these Ferns it is highly desirable that clean dry pots be in readiness, and compost of a turfy open character employed. A mixture of turfy peat and turfy loam in equal parts, with a free admixture of leaf soil, sand, and charcoal forms admirable potting material for all sizes of plants. Small thrifty plants in 3-inch pots may be moved into 5-inch pots. Good plants in 5-inch pots ought to have a shift into 7 or 8-inch pots. Plants ready for a move from the latter sizes will require 10-inch pots. If still larger specimens are required another shift may be made into 14-inch pots.

Large old plants which have not been repotted for years ought to be turned out of their pots, the roots cut through just above the drainage, and then be divided into two or four, then reduce the divisions until they can be comfortably placed in pots of suitable size to accommodate them, and a fair quantity of compost round the roots, neither overpotting nor underpotting. In the former case the soil will be soured before roots can occupy it, and in the latter vigorous growth will not be encouraged. The pots should be carefully crocked, and some rough parts of the compost placed over the crocks to exclude soil from the drainage. Make the compost fairly firm round the roots, finishing off so that the crowns from which the fronds spring are level with the surface of the soil.

A moist, warm atmosphere is best for the plants after potting, for under such conditions little water will be required at the roots until they have freely pushed afresh into the new compost. Excessive

light will be trying to the plants; not only so, but hot sunshine dries up the soil, rendering frequent watering necessary. Shade will, therefore, be beneficial, but it is desirable to afford it judiciously. Heavy and continuous shade causes the fronds to develop a dark green hue, but they are much deficient in lasting qualities, soon withering when cut. Plants grown under light conditions possess more substance, though they are of a less dense green. Affording rather heavy shade at first is without doubt beneficial, but afterwards all the light the plants will endure and a good circulation of air produce the best results. The pots ought always to stand on a moist base, which tends to equalise the atmosphere about the plants.

Water will be needed in increasing quantity as growth advances. When the pots are full of roots weak soot water given occasionally is of assistance. Syringing is not needed so much by the plants, but the humid atmosphere it creates is decidedly helpful in promoting growth. The sides of the pots, the material on which they stand, the walls, staging, and other available surfaces may be regularly moistened in hot weather with advantage.

When growth has been completed, quite cool and airy conditions suit the plants, which maintain a healthy appearance throughout the autumn if fronds are not too freely cut. Plants well grown from spores usually produce in due time finer fronds than those which result from clusters of weak divided crowns.—E. D. S.

SOUGHT AND FOUND.

(Continued from page 212.)

"DRAINER?" It appears to me that ever since this place was breached the sewage and liquid manure have been allowed to escape to the river through the agency of that filthy orchard ditch. Now, I want to treat with you for the utilisation of sewage apart from night soil. To do so we must first lay an underground drain to lead from the farmyard; next, a like conveyance from the back kitchen sink, not forgetting an "odour trap" insertion for the latter; and lastly, a drain leading from the cemented sewage tank. As there is a gentle incline to lead into the orchard, 3-inch diameter iron pipes can be inserted to convey the liquid into a network of shallow open drains cut in the turf, and by its own specific gravity be conveyed to any part, or tree, in the orchard, or any other place where it might be required. These things were done; the results answered, and are adhered to to this day, and more, the tiled buildings were furnished with gutters, and nothing but the rain-water caught from them and those from the house is allowed to escape down the ditch into the river from these premises.

"*Editeurs obligés.*" I haven't done with my tale of the waters yet. In a yard recess at Rushbrooke Hall, in Suffolk, an old Elizabethan mansion, near to where stood a force-pump, when a stripling of ten, or thereabouts, it was my allotted task through its agency to keep a special cistern supplied with water. Alas! gaping cistern, with tap drawn dry, and a too frequent wrathful kitchenmaid. In the centre of the yard, however, there happened to be just then a hollow into and out of which to jump was more fascinating than to pump, till one eventful day, when I was exercising my bounding abilities, and had alighted on to the opposite brink, down went the flagged sinkage into a deep, gaping well; and my jump but just saved me from a jumble amongst decayed timber and stone and goodness knows how many feet of water—a fearful chasm. I related the above circumstance to the "Drainer" as a reason for what I wanted him to find, adding, I think I can observe a sinking going on here in the Walnut tree yard, and I don't want a repetition of what happened at Rushbrooke. Let us know the reason of this sinkage. Dig away, but do not stand on the opening of rotten timber slabs that had given way and were resting on *débris* of earth and very old patterned well-brieks. Now the question, Did you ever work at well-sinking? "Yes, many a one." Then if you can sink a well you certainly can empty one that has been filled up; this may prove to be merely a shallow dry one, but we shall see.

Soon Tillen alone found himself insufficient. Wooff was called in to assist, and when both were unequal to the work, the latter's son was added; then, to the rescue, I was included. As water trickled in it was necessary to be quick, and not until a depth of 40 feet was obtained did we reach the bottom of the bricks resting upon the blue clay. "Shall we go down any further," said Tillen. "No, if water comes, of which there seems every probability, I do not know that we shall want it. It might be no one knows how far before we got through the clay down to the chalk! The old fellows who sank the well in every probability knew what they were about, but we shall never know why it was filled in; at any rate, we are recompensed with sufficient soil to top-dress the home meadow. You know how to remove your staging paraphernalia, and how to rectify the brick-work, Tillen, and then we will leave well alone."

Result: I was happy to find no accident occurred, for "drainer" twisted himself about like an eel, and now and ever since some 20 feet depth of water, a little more or less according to the seasons, presents

itself. It is "clear as crystal," "hard as iron," and "cold as charity;" but it has been the delight of the missus in hot summer weather, when the butter "run," for then, by some cloth envelope arrangement, it is entered into a bucket, which by the aid of a long chain is sunk to the bottom of the well, to be again withdrawn in the course of an hour's time firm and fit for "making up." Our spring water is so charmingly soft that we never want the well water for the household. Hard water is best for brewing with. I used it here for two years, till the American Apples spoilt my Reading market; but now, excepting those the missus requires for home supply, and a good village request, I make the rest into cider and save my brewer's bill, and the sewage supply that the trees get secures and maintains for us good crops of fruit, plus the fowls, for ever since we came here the orchard has been the "chicken" run. Albeit, this makes us look out for the fallen fruit, more particularly those of the first to escape from the trees—the grub containers; at least, that is when the cocks and hens allow us the chance, for they quickly run, or rather fly, to the spot directly they hear the concussion with mother earth, and then unfortunate Apple, woe be to the maggot—no cider, no moth to follow from you.

Well, I felt as I read friend Pownall, on page 209, of what encouragement the lecturers and illustrators receive from the county councillors in his latitudes. How I should like to live in a recognised position! My first orchard that I planted, to set an example to follow on, was in 1837, and my first treatise on "Planting" was published in the pages of the *Cottage Gardener* in 1851. I have been "at" this sort of thing ever since, and now this place is completed as a grown-up lecture—thoroughly drained, the arable land laid, if down to grass now become well "knitted," fruit, forest, and ornamental trees planted now grown up and growing into production; a model of what a small residential property or cottage farm should be. But—I have never been able to "catch the Speaker's eye"—to receive the slightest County Council encouragement, or a pat on the back from any high authority in the way of rendering the slightest assistance; all done single-handed. *Si sic gloria omnes.*—ROBT. FENN, *Sulhamstead, near Reading.*

A TRANSFORMATION.

I WAS pleased to see that your correspondent, Mr. Geo. Picker, has drawn attention (page 240) to the neglected state of many of our fruit trees, in allowing them to be covered with moss, lichen, scale, American blight, and red spider. Three years ago I heard a lecture on fruit culture by Mr. E. Molyneux, who also showed samples of Apple and Pear trees dressed with caustic soda and pearlash. In March, 1896, I ordered a Vermorel knapsack sprayer with the extra 8 feet of rubber hose and the 16-foot telescope brass rod with the three different sized nozzles. I had some difficulty in getting the potash, as I wanted a special make—viz, Greenbank's X, 98 per cent. When my dressing was ready the leaves were fast expanding, so I could only apply the mixture to the trunks of the trees and to a few feet of their branches. I used about 350 gallons of the liquid that season, and so effectual was it, that this month, March, 1899, I can tell to an inch where the dressing was applied. It seems to have destroyed the outside of the bark, which has dried up and fallen, leaving the tree stem bright and green. This year I have done more with it, having used $\frac{3}{4}$ cwt. caustic soda and $\frac{3}{4}$ cwt. pearlash, which made 825 gallons of mixture. With this I dressed over 2000 trees, varying in size from 3 to 35 feet high, and from 3 to 40 inches diameter. With the Vermorel sprayer, and using the medium-sized nozzle, a grand spray is secured, so much so, that people watching the work said we were smoking the trees.

It is a very lively time for all insects. Scale I have seen fall from the tree on the slightest touch ten minutes after dressing. Workmen on this job should wear their oldest clothes and boots. To protect the hands use rubber gloves, such as are used by doctors for post-mortems. At the end of the glove bind round the wrist a piece of cloth to prevent the solution running down the arm when working with the arms above the head. I also guarded my face with a bee-veil, which must be washed every night, or the potash will dry and fly off in a powder and get into your nose and throat, which is very unpleasant.

In mixing I dissolve 5 lbs. pearlash in hot water and 5 lbs. caustic soda with boiling water. Great care is required in dissolving the soda, as it boils over if too much water is added at a time. With these quantities I make 50 gallons of solution. I should certainly have tried the softsoap had I known of it, and will bear it in mind another year. I see on page 230, under "Orchard Spraying in Nova Scotia"—potash spray: that $\frac{1}{2}$ lb. to 1 lb. of crude caustic potash is used to the gallon of water. Would not this be too strong for, say, last year's growth of our fruit trees? I should like also to ask the same correspondent if he can name the best thing to rub on the hands and face before using the above? I see for Bordeaux mixture he recommends mutton fat. Before using a veil my face was burnt all over by the falling spray.

Any hints to prevent injury to users of the spray will be thankfully received. Of course, by the use of a veil, the sight is obstructed. It is time wasted to use old chemicals. I used some, left over, three years ago, with little effect. The trees so dressed will have to be done again next year.—JNO. MILES, *Southampton.*

SOME OLD-FASHIONED PLANTS.

IN out of the way places one finds some of our old favourites still grown, cherished perhaps for old association's sake, or for the merits inherent in themselves, but which in these days of growing for cut flowers have in many instances become neglected. The plants of which I intend to mention are really useful for the embellishment of the greenhouse or conservatory, though their flowers may not be of much value in a cut state.

Libonia floribunda.—How handsome are well-grown specimens of *Libonia floribunda*. When I observe them grouped amongst *Callas*, *Eupatoriums*, and *Azaleas*, I cannot help wishing they were oftener seen. They are easy to propagate, easy to grow, and it may well be added easy to spoil. Cuttings of young growths root readily in a frame on a hoibed at any time when procurable, though spring is perhaps the best. When rooted the young plants should be placed in 3-inch pots, in a compost consisting of sandy loam and leaf mould, and kept in a close frame for a time, be repotted as soon as the roots reach the sides of the pots, and placed back in the frame until the roots take to the new soil, when the plants may be gradually hardened and stood out of doors on a bed of coal ashes until the approach of bad weather. A fairly warm light greenhouse suits them best in the winter. Plants in 6-inch pots are generally large enough; afterwards an annual slight reduction of the ball and a return to the same size of pot with fresh soil will keep them in health for some years. Care is necessary to supply abundance of water when the pots are full of roots, as neglect of this will often cause the leaves to fall, thus rendering the plants unsightly, and at the same time cause an absence of flowers.

Streptosolon Jamesoni.—Efforts have once or twice been made to popularise this old friend, but so far it is rarely grown. Its rather straggling habit militates against its becoming a general favourite. The colour of the flowers should recommend it however, being, under good cultivation, a deep reddish orange. The cultural conditions accorded *Libonias* apply equally well to this plant, with the addition of a few stakes, as it requires tying into shape.

Mimulus (Diplacus) glutinosus.—Why this is not more often grown for house decoration in small pots it is difficult to understand. The blooms are not only of a beautiful colour, but are also quaintly shaped, and ladies readily fall in love with them. It stands and keeps fresh in rooms a long time, when receiving due care. After our plants have finished flowering we usually insert a few cuttings in a close frame. A rather light sandy soil suits the plants best, with ordinary greenhouse treatment. The leaves are, as the name implies, sticky, and not pleasant to handle.

Scented "*Geraniums*."—How often in cottage homes have these given pleasure? They are also useful for the greenhouse, and a few sprays mixed with cut flowers are at times greatly appreciated. Cuttings of clean healthy growth, inserted in sandy soil in spring, and placed in a warm corner, soon root, and may be quickly grown into fair sized plants. The old oak leaved, the peppermint scented, the lemon scented, and the variegated Lady Plymouth, are all of easy growth.

Primula alba p'ena.—Since the introduction of the semi-double varieties of *Primula sinensis*, this useful plant has fallen somewhat out of cultivation. This is rather to be deplored, as of all the indoor *Primulas* this is, I think, the most beautiful. It is at times a cause of slight trouble in propagating, but if the lower parts of the young growths are mounded up with some light sandy soil, consisting chiefly of leaf mould, roots will soon be emitted if the mulching round the collar be kept moist. When this has taken place they should be severed from the parent plant with a sharp knife, potted into small pots and be kept close on a hoibed until growth has well commenced. Afterwards they may be hardened and placed with the other plants which are being grown in cold frames. This plant repays for rather a higher temperature than is usually accorded *Primulas* in the winter, and also responds to liberal treatment in the matter of feeding.

Crassula (Kulosanthes) coccinea.—Of very little or no use for cutting is this old occupant of our glass houses. It may be charged with being of a stiff and rather ungainly habit, yet the deep rich green of the leaves, and the bright, sweet-scented flower-heads, have a beauty all their own, and room may well be found for a few plants where possible. Cuttings should be rooted annually, three or four in a 3 inch pot, as these kept through the winter and repotted in spring make good plants. Care is necessary during the dark dull days in the matter of watering, otherwise the culture is of the easiest.

Begonia metallica.—This is not quite such an ancient occupant of our gardens as some of those already mentioned, but has been known sufficiently long to be included under the heading. A rather higher temperature than the ordinary greenhouse is most suitable, but it will grow and make a useful plant in cool quarters if care is taken with watering. Cuttings inserted singly in thumb pots, or three or four in larger ones, placed in heat, soon grow and make useful stock. The flowers in themselves are pretty, if of no use in vases, and add considerably to the beauty of the plant.

I could enumerate many more, such as *Rhynchospermum jasminoides*, a favourite inmate of our glass houses; *Linum trigynum*, with its lovely yellow flowers, which drop all too quickly, but if the plants are grown strongly and bloomed in a cool house the trouble is lessened in a great measure; also some of the old climbers, such as *Tecoma jasminoides* and *Abutilon vexillarium*, amongst many others. But I must stop, such hosts of recollections and memories arise as I write of these old-time favourites that I fear my pen may stray to some divergent theme.—J. SHALFORD.



RECENT WEATHER IN LONDON.—Holiday makers around London will have rejoiced in the pleasant weather that prevailed from Saturday until Monday night. True, rain threatened to fall several times, but only came in very brief drizzles. On Tuesday morning, and again after noon, there were several rather heavy showers. At the time of going to press on Wednesday it was warm and summer-like.

— WEATHER IN THE NORTH.—A good deal of rain has fallen during the week ending 3rd inst., and high winds have been frequent, with a much higher temperature. Snow fell heavily on the morning of Saturday, giving place to rain in the afternoon. This continued throughout Sunday and Monday morning, but the afternoon was pleasant with a light wind from the west.—B. D., *S. Perthshire*.

— MISTLETOE PROPAGATION BY BIRDS.—Looking around the gardens and new conservatory at Merlin, near this town, recently with Mr. and Mrs. Fayle, we were shown on an Apple tree a young Mistletoe seedling growing through bird excrement, showing the seed and berries must have been eaten in the winter by blackbirds or thrushes, and voided by them intact on the Apple bough, and then commenced to grow as a parasite from the Apple bark. This system of seed propagation in unlikely places is not unusual.—W. J. MURPHY, *Clonmel*.

— ANCIENT SOCIETY OF YORK FLORISTS.—The rules and schedules of prizes to be held in connection with this excellent Society during the present year have come to hand, and it is evident that there is to be no retrogression. The total amount in prize money reaches upwards of £400, distributed over numerous classes at several exhibitions, of which the chief appears to be the Chrysanthemum on November 15th, 16th, and 17th in the Exhibition Buildings of York. The book embodies also the names of the patrons and officials, together with a list of the subscribing members. Mr. Geo. F. W. Oman, 38, Petergate, York, assumes the office of Secretary, in succession to Mr. J. Lazenby, who has retired.

— PRESENTATION TO MR. JOHN LAZENBY.—At a meeting held on Thursday last, the Committee of the Ancient Society of York Florists presented to Mr. John Lazenby, who has resigned the post of Secretary, an illuminated testimonial and a purse of gold, subscribed for by members of the Society and other friends. Mr. J. C. Milburn took the chair. Mr. J. Pillmoor made the presentation, and expressed the regret of the President (Alderman McKay) that he was unable to attend. Councillor Staines said there was no doubt the members of the Society had regretted and would continue to regret, that their late Secretary's ill health had brought about his resignation; at the same time they hoped he would still be able to help forward the good work in connection with which he had done so much during his twenty years of service. Mr. Lazenby thanked the promoters and the subscribers to the testimonial, and said that since he had given up the responsibility of the office he had had better health.

— THE NASH.—On the occasion of a recent call at The Nash Kempsey, Worcester, the picturesque old home of Sir Richard Temple, Bart., I was much interested in a very fine display of Cinerarias and Cyclamens in a lean-to house facing the flower garden in front of the mansion. The central stage was completely filled with magnificent Cinerarias, the pots being hidden by luxuriant foliage. The habit of the plants was excellent, and the colour, form, and size of flowers superb. But perhaps even more noteworthy were the 200 Cyclamens which filled the front stages. All shades, from the purest white to the richest crimson, were splendidly represented. The various colours were grouped, and in this way comparison was simplified. As I saw them they were literally a mass of flower, the pots being covered by the handsome foliage. The plants were seedlings flowering for the first time, and started throwing up flowers in September. During the summer months they were kept growing, plunged in cold frames well up to the glass, constantly moistened with the syringe, and lightly shaded during bright sunshine. The compost used for them was little else but good fibrous loam, coarse leaf soil, and sand. Altogether Mr. Justice has every reason to be proud of the display. A feature on the kitchen garden walls is a collection of well trained young Peach trees, many of which carried good crops of fine fruit last season.—W. H. W.

— DEATH OF MONS. CHARLES NAUDIN.—We regret to learn from the "Gardeners' Chronicle" of the death, on the 19th ult., of this most celebrated French horticulturist. The deceased was eighty-three years of age, and has long been Director of the Villa Thuret, at Antibes. He was a botanist of the first order, and his loss will not be that of France alone, but of the whole gardening world.

— GARDENING APPOINTMENTS.—Mr. Mossop, several years gardener at Blawith, Grange-over-Sands, has been appointed head gardener to Harvey Goodwin, Esq., Orton Hall, Westmoreland. Mr. Arthur Childs, four years foreman at Sedgwick House, Kendal, has gone as gardener to B. Mitchell Innes, Esq., Churchill, Hemel Hempstead. Mr. W. Meredith, seven years with D. P. Seller, Esq., Dudbrook House, Brentwood, Essex, has been appointed to Stansted Park, Emsworth, Sussex.

— HAWFINCHES AND PEAS.—We have, I am sorry to say, suffered considerable loss from these birds in the past. With the exception of their weakness for Peas, I have not heard that there is any other wickedness known about these beautiful creatures. In some districts they may be numerous, but so far as I know they are comparatively rare, and that is one reason why they were not mentioned in my notes on Peas. As soon as we perceive signs of their presence we dust all over the rows of Peas with lime; it is of course best done after a shower, or in early morning when the dew is on. This has proved effectual, and saved us many dishes of Peas. Early rows appear to be exempt from their attacks.—J. SHALFORD.

— CROCUSES AT HAMPTON COURT.—The Superintendent of the Palace Gardens is to be congratulated on having created for the delectation of the thousands of visitors who attend this attractive place of resort at Easter quite a floral sensation with Dutch Crocuses only. These early flowering bulbs are not seen in long formal lines, neither are they in solid clumps or massed in beds. They are dotted on to the broad grass glade that runs between the upper range of flower beds and the moat, and beneath the tall rows of Limes. They are in informal masses, yet not in dense masses. In some cases two or three colours are mixed, in others are of one variety. The space covered extends from the garden entrance to the Hampton Road, is very broad, and probably some 300 yards in length. As a display of Crocuses, it is without exception one of the prettiest yet seen.—D.

— WAKEFIELD PAXTON SOCIETY.—Programme of meetings for the first quarter—session 1899. Meetings are held each Saturday evening at eight o'clock. April 1st, "Gardeners," Mr. J. L. Twigge, Wakefield. April 8th, "Orchids for Beginners," Mr. John T. Barker, Hessele. April 15th, "Daffodils," Mr. W. Garside, Wakefield. April 22nd, "Some Plant Parasites and Messmates," Mr. F. Rhodes, Bradford. April 29th, "Spring Flowering Bulbs and Alpines," Mr. W. A. Clark, Messrs. J. Backhouse & Son's Nurseries, York. May 6th, "The Cultivation of the Peach and Nectarine," Mr. Geo. Hudson, Woolley. May 13th, "Practical Poultry Breeding and Rearing," illustrated, Mr. W. E. Corden, Wakefield. May 20th, "The Gloxinia," Mr. T. Gartery, Rotherham. May 27th, "Principles of Botanical Classification," Mr. J. W. D. McPherson, B.A., Grammar School, Wakefield.—T. H. MOUNTAIN, A.S. NICHOLSON, *Hon. Secs.*

— ISLE OF WIGHT.—The Isle of Wight Horticultural Improvement Association held its third annual non-competitive exhibition of Daffodils and spring flowers at Ventnor on Saturday, April 1st. The Show was opened by Dr. J. Groves, who said the Association had been formed to encourage the development of horticulture in the island so as to give pleasure and provide for the wants of the many visitors, on whom they (the islanders) were largely dependent for their livelihood. The show was scarcely up to its usual standard, though there were some excellent flowers staged by Messrs. Barr & Sons of London. Mr. Geo. Honeybourne, gardener to Lady Daly of Ryde, staged a fine collection of Daffodils, and received the Association certificate for cultural merit. Mr. W. W. Sheath, gardener to Miss Mitchell of Ventnor, arranged a group of miscellaneous flowering and foliage plants, including some fine specimen *Primula obconica* and *Euphorbia splendens*. Mr. W. Russell, gardener to C. H. Comb, Esq., Bonchurch, sent a group of flowering and foliage plants in addition to a fine collection of Narcissi. Mr. F. A. Hill, gardener to Miss Cass of Ventnor, contributed some *Spiraea japonica*, and Mr. A. J. Cole, gardener to — Rendell, Esq., of Sandown, a nicely arranged vase of Sir Watkin, which was much appreciated. The Association is also encouraging bee-keeping, and Mr. W. S. Barnes' observatory hive and section honey were a great attraction. Mr. C. Smith of Ventnor, an amateur, well merited the Association certificate for cultural merit for a large and well grown plant of *Imantophyllum miniatum*.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Fai.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1899.										
March and April.										
Sunday .. 26	W.S.W.	deg. 48.8	deg. 44.8	deg. 54.2	deg. 37.5	ins. —	deg. 37.9	deg. 39.2	deg. 42.9	deg. 34.5
Monday .. 27	S.S.W.	48.9	43.4	57.1	32.3	0.02	40.3	40.3	42.9	21.5
Tuesday 28	S.S.W.	50.6	47.8	55.1	41.9	0.02	42.0	41.2	42.9	35.0
Wednesday 29	W.S.W.	55.0	49.1	58.9	50.1	—	45.1	42.3	43.1	43.7
Thursday 30	W.S.W.	50.0	47.4	57.8	44.5	0.11	45.9	43.6	43.1	37.8
Friday .. 31	S.E.	45.2	45.1	60.7	43.5	—	46.3	44.2	43.5	39.5
Saturday 1	S.S.W.	52.7	50.5	64.8	44.9	0.01	48.1	44.9	43.9	39.7
MEANS ..		50.2	46.9	58.4	42.1	Total 0.16	43.7	42.3	43.2	36.0

The week ending April 1st has been very mild and spring-like, with a remarkable absence of sun.

— MARCH WEATHER AT HODSOCK PRIORY.—Mean temperature, 41.5°, + 0.7°. Maximum in the screen, 62.2°, on the 11th; minimum in the screen, 16.7°, on the 22nd. Minimum on the grass, 1.1°, on the 22nd. Frosts, in the shade, 16; on the grass, 24. Sunshine, 120 hours, or 33 per cent. of the possible duration; difference from average, + 14. Rainfall, 0.83 inches; difference from average, - 0.82. Rainy days, thirteen. Maximum fall, 30 inches, on the 30th. Rainfall from January 1st, 4.20 inches; difference from average, - 0.91. A dry and fairly bright month, with a very sharp spell of cold in the third week.—J. MALLENDER.

— MARCH WEATHER AT BELVOIR CASTLE.—The prevailing direction of the wind was west on twenty-three days. The total rainfall was 0.59 inch, which fell on ten days, and is 0.97 inch below the average for the month; the greatest daily fall was 0.20 inch on the 30th. Barometer (corrected and reduced), highest reading, 30.628 inches, on the 1st, at 9 A.M.; lowest, 29.035 inches, on the 9th, at 9 A.M. Thermometers, highest in the shade, 59°, on the 11th; lowest, 15°, on the 21st. Mean of daily maxima, 48.80°; mean of daily minima, 31.25°. Mean temperature of the month, 40.02°; lowest on the grass, 12°, on the 21st; highest in the sun, 110°, on the 12th. Mean temperature of the earth 3 feet deep, 40.83°. Total sunshine, 175 hours 40 minutes. There were two sunless days.—W. H. DIVERS.

— SUSSEX WEATHER.—The total rainfall for the past month at Stonehurst, Aidingly, was 1.00 inch, being 1.08 inch below the average. The heaviest fall was 0.49 inch on the 25th. Rain fell on six days. The total fall for the quarter was 7.44 inches, which is 0.78 inch above the normal. The maximum temperature was 59° on the 30th, the minimum 20° on the 21st and 22nd. Mean maximum, 49.17°; mean minimum, 32.19°. Mean temperature 40.68°, which is slightly below the average. The minimum temperatures from the 19th to the 25th were 27°, 25°, 20°, 20°, 21°, 22°, 26°. On the evening of the 21st there was thunder and lightning, and in a very short time everything was covered with 2 inches of snow, which lay till the sun melted it next day. The frost has blackened all Peach bloom that was expanded, though covered with two thicknesses of mats. Early Pear bloom has also suffered.—R. I.

— GIGANTIC SPEAR LILY OF AUSTRALIA.—The Gigantic Spear Lily (*Doryanthes excelsa*) of New South Wales is much rarer in our gardens than its singular beauty entitles it to be, says an Australian exchange. In early summer visitors to the Illawarra district are attracted by straight stems, 20 feet high, surmounted by bulky flower-heads of a deep crimson colour. The flowers are Lily-like, each petal being about 5 inches in length; they open in succession, so that for many weeks the plants remain in blossom. As some of the flowers shrivel and die off others open and expose the inside of the petals, which is of the most delicate rose-pink, shading into the purest white; whilst the outside is, as has been said, a deep crimson. The flowers when cut and placed in water will last for upwards of a month. The stem is porous and Reed-like, and the crimson cluster of flowers at the top consist of about a hundred blossoms. The Queensland Spear Lily (*D. Palmeri*) is another handsome plant, well worthy of cultivation in some of our larger gardens. Both species flower in the Melbourne Botanic Gardens. Apart from their fine blossoms, these plants are worth growing for their handsome foliage. It belongs to the Amaryllidaceæ.—("Indian Gardening.")

— INFLUENCE OF POOR POTATO SEED.—Small tubers are those not matured, hence inferior in quality and vitality. An overlooked source of imperfect seed, says a writer in a transatlantic contemporary, is allowing the first sprouts to grow to such an extent before planting that they must be either broken off entirely, or will become bruised in the necessary handling, which will kill them. The second sprouts are smaller and less vigorous, produce a weaker plant, which is more subject to fungus.

— AUTUMNAL HUES.—One of the most brilliant of Nature's effects—the autumnal tints of leaves—is little understood even now. From laboratory experiments and observations in the Alps, Mr. E. Overton concludes that the red colouring matters are chiefly due to sugar, and are in most cases unions of tannin compounds with sugar. Autumnal sunshine, says a contemporary, favours the production of sugar and the chemical process leading to the formation of the pigment, while the low temperature prevents conversion of the sugar into starch.

— MR. GEORGE HARRIS.—We have announced, on the authority of Mr. Harris, late of Alnwick Castle Gardens, that he had accepted a position as exponent on gardening under the Northumberland County Council. He now desires us to state that he has resigned that appointment, and purchased land at Kendal Green, Westernhope, near Newcastle, whereon to erect glass structures for growing produce for market. The County Council position was declined by another undoubtedly able teacher on gardening, Mr. D. T. Fish, because of the peculiarity of the demands.

— ANTHOCERCIS VISCOSA.—This softwooded New Holland plant is seldom seen in gardens, though it is of easy cultivation and showy. The leaves are 2½ inches long and covered with sticky glands. The flowers are usually produced singly from the axils of the leaves. They are 2 inches across, with a tube half an inch deep. With the exception of the inside of the tube, which is marked with green, they are pure white. Cuttings root readily in sandy soil in a close case, and good flowering plants may be had in a few months. A mixture of equal parts of good loam and peat, with a good quantity of sharp sand, is a suitable compost, and it will be found advisable to stop the plants frequently when young. A greenhouse from which frost is excluded is all that is necessary to grow the plant successfully.—W. D.

— CINERARIAS, CYCLAMENS, AND PRIMULAS.—In looking over the well known establishment of Messrs. Criban & Son, Oldfield Nurseries, Altrincham, one could not help being impressed with the display of the above charming winter and spring flowering plants. Cinerarias were of medium size, but carried blooms of the finest form; the colours, too, embraced almost every conceivable shade. The Cyclamens have been carefully tended, and no pains spared to try to make improvements in the somewhat limited colour of these popular plants, and I noticed several with distinct shades. The plants were admirably grown and profusely flowered, making in all a splendid show. As with the two former the Primulas were quite up to the average in every respect. Dwarf, sturdy plants, and handsome heads of bloom are the leading characteristics of the strain.—A VISITOR.

— HESSLE GARDENERS' SOCIETY.—The last meeting of the above Society was held on March 28th, when the prize essays, which are competed for by the junior members of the Society, were read. They are decided in two classes—viz., under eighteen years of age, and over, the subject being for the former, "The Advantages of Keeping a Diary of Horticultural Operations," and the latter, "The Formation of a Kitchen Garden and its Cropping." Unfortunately the competitors were not quite so numerous as in previous years. The successful essayists in the class for those under eighteen years of age were Mr. G. Mason and Mr. C. Wattam; in the class for those over eighteen years, Mr. J. O'Donoghue, Tranby Croft, and Mr. M. Skinner, Bishop Burton Hall, were placed in the order named. After the reading of the prize essays a general review of the session was indulged in and proved of much interest and instruction. The interest in this popular Society is well maintained, and the finances are in a most satisfactory condition. Mr. Mason presided, and made one of his humorous speeches, which delighted all present. Mr. Barker showed a group of hybrid Phaius with about fifty varieties of cut blooms of *Dendrobium nobile*, and a collection of *Odontoglossum Rossi majus*. Mr. Hardy moved "That the best thanks of the Society be given to Mr. Barker for the beautiful exhibits of Orchidaceous plants which he had placed before the members from time to time," which was seconded by Mr. G. Picker, and carried with acclamation. The usual votes of thanks to all the officers were passed, and so ended the most successful session this Society has yet enjoyed.—J. T. B., *Hessle*.

— **FLORILEGIUM HARLEMENSE.**—From Mr. de Erven Loosjes, Haarlem, we have just received the ninth issue of this splendid work, of which the excellence of production continues to be worthy of all praise. The present number comprises Hyacinth Charles Dickens; Double Tulips Rex Rubrorum and La Candeur; and a superb plate of Narcissi Emperor, Empress and Sir Watkin. When the series is complete it will form a most valuable gallery of bulbous and tuberous rooted plants.

— **AMERICAN FRUIT IN GERMANY.**—The officials of the German Foreign Office have notified the United States Embassy that the Government will henceforth admit American Oranges, Lemons, and Raisins without examination, and also that all American fresh and dried fruit will be allowed to pass in bond through Germany without being examined. The decisions are based on the favourable reports of the German experts sent to America. The question whether dried fruit sent abroad is harmless, especially for the transmission of the San José and other insects, and whether the fruit may be imported without previous examination, has not yet been decided. The probability is, says an American contemporary, that the decision will be favourable to American interests.

— **NELSON RECREATION GROUND, BERMONDSEY.**—Nelson Recreation Ground, which has been formed in Kipling Street (late Nelson Street), Bermondsey, was opened on Thursday forenoon. The open space, which was formerly a burial ground attached to Guy's Hospital, has an area of a little over three-quarters of an acre, and is surrounded on all sides by warehouses and other large buildings. It is the only ground in the immediate district now available for public recreation. Half of the purchase money—£4600—was paid by the County Council, and the other half by other bodies. We learn that the Metropolitan Public Gardens Association, in addition to their contribution towards the purchase money, spent £500—a donation from the Trustees of the London Parochial Charities—in laying out the ground.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—At the meeting of the Devon and Exeter Gardeners' Association at the Guildhall on March 29th, Mr. G. C. Crabbe, of Prospect Park, Exeter, read a paper on "Pelargoniums: Their Treatment from an Amateur's Standpoint." Pelargoniums, mis-called Geraniums, were a very large family, but all loved a similar soil and treatment. With regard to the soil, rubbish dug up from the garden or knocked out of pots was of no use. A good all-round soil could be made with three parts of loam, one of leaf mould, and one part of coarse sand well mixed. This soil would do either for rooting cuttings or growing plants. Insert cuttings round the edge of a pot, water and place in a shady and airy spot, and in six weeks' time they would become rooted plants. The cuttings should be firmly inserted and kept fairly dry. The young plants should be put in 4½-inch pots. The new plant must not be allowed to run away as it liked. When 8 inches high cut out the growing point, as that compelled the plant to break out at the sides, and allow only those shoots to develop that were seen to be necessary. The plants would grow well for the whole season in these pots. The latter part of the paper dealt with different varieties of the Pelargonium. Mr. J. Abrams, Peamore, occupied the chair.

— **FARMERS AND FRUIT CULTURE.**—Your correspondent "A. D." (page 245) is right, there is room for improvement in our fruit growing, but surely we are improving, if slowly. Some of our sons are being taught the various details connected with the work, as we know there is money in it. But "A. D." seems to think they waste too much valuable time in "hunting and sporting." Do they not need relaxation? And does "A. D." think their time is always wasted while hunting? I think he will find they often go hunting from a business point of view, as he must know that breeding good horses pays, and how can they better dispose of a good horse at a good price than by showing him off to "the Squire" or the "gentleman from town" in the hunting field, making as much, perhaps, from the sale as they would from fruit-growing in a year. Our sons, or the majority of them, have to work hard, early and late, seven days a week, and we must not begrudge them an occasional day's hunting, and if they care to enter their horses for a "point to point," or the cup at the "Hunt" steeplechase, we wish them luck, as we know they still combine business with pleasure. But peg away at them, "A. D.," about improving their orchards and then we shall get better cider. But now I remember our friend does not like cider, as he says it is "good Apples spoilt." There I beg to differ from him, as I know when properly made and kept there is not a more wholesome beverage made. I think if "A. D." were horticultural instructor in our county it would not add to his popularity among the farmers to condemn their hunting and sporting, and say their sparkling champagne cider was "good Apples spoilt."—DOUBLE GLOUCESTER.

— **FLOWERING TREES AND SHRUBS.**—Quite surprising is the recovery from what seemed to be grave injury from cold biting winds and frosts of the Almond, double-blossom Peach, Snowy Mespilus, and other early flowering trees since the weather became soft and showery. Just now all these trees are in glorious bloom, and it naturally leads to the hope that if no appreciable harm has been done to the flowers, that very little harm has been done to fruit bloom. Very marked also has been the sudden flower development seen on the Forsythias, as well as on the Daphnes. The Forsythias are exceedingly graceful, and rank amongst our brightest of early blooming shrubs. We seem at last to have made a fair start for spring bloom and weather now.—WANDERER.

— **AT IT AGAIN.**—Of course they are, and ever will be so long as the brown sparrow clings tenaciously to the haunts of men. I thought how pleasing the bright coloured Crocuses looked as they opened out in response to the call of the balmy sunshine; but the sparrows see them in another light, and rejoice in pecking to pieces the charming flowers. Why they do it I have not yet learned, except it be that they are imbued with an uncontrollable spirit of mischief which must have vent somewhere. In a moment of aggravated rage I drive them from the Crocuses, and they at once give a little chirrup and settle on the Gooseberry and Currant bushes a little further on. Everyone knows what that means, especially when the ground underneath is strewn with the remains of ruined birds. There is nothing for it but to follow them up with the mixture of soot and lime for dusting over the bushes, and while busy with that operation they are back at the Crocuses again. Oh! those sparrows! Can there be wonder that gardeners often lose their tempers?—G.

— **THE HAILSTORM INSURANCE CORPORATION.**—On Monday, March 24th, the annual report and financial statement were presented at Simpson's Hotel of the Nurserymen, Market Gardeners' and General Hailstorm Insurance Corporation, Ltd. This is the fourth annual report, and it is matter for congratulation to all concerned to see how eminently satisfactory is the state of affairs. The directors say they "are pleased to be able to draw attention to the gratifying fact that not only has the premium income been increased by over 27 per cent. and the income from investments largely augmented during the year, but that the ratio of working expenses has been considerably reduced as compared with previous years." They continue, "Notwithstanding the fact that hailstorms occurred in so many different parts of the country, fortunately no damage was done to glass insured with this Corporation, although in several instances the gardens of policy holders were in close proximity to the storm areas." Finances are equally sound. Full particulars of the Corporation can be obtained from the Secretary, Mr. Alex. J. Monro 1 and 2, King Street, Covent Garden, London, W.C.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—Present: Mr. Veitch (in the chair); Dr. Müller, Rev. W. Wilks, Rev. G. Henslow, Hon. Sec.; visitor, Mr. Lees.

Flow of sap in a Sycamore during frost.—Mr. T. R. Bruce, The Old Garrsop, New Galloway, sent the following communication:—"I noticed icicles hanging on a newly cut branch during the whole of last week, and steadily increasing, although the mean temperature of the week was only 30°. The mean temperature of the 24th of March was only 25.7°. The cut branch would be about half an inch in diameter, and some pounds weight of icicles, or pints of sap, have flowed out during the week, and it still continues to flow. The maximum and minimum temperatures were as follows: 19th, 42.5°, 21°; 20th, 42.5°, 23°; 21st, 38.5°, 15°; 22nd, 38°, 21.5°; 23rd, 37.5°, 21.5°; 24th, 40°, 11.5°; 25th, 43°, 23°."

Narcissus, aberrant forms.—Mrs. F. M. Cooper sent some flowers—partly fasciated, partly double, and with coherent ovaries, &c., not unusual sports under cultivation.

Carnations and Chrysanthemums attacked by insects, &c.—Mr. Lees, of Trent Park, New Barnet, exhibited specimens of Pinks and Chrysanthemums, which were forwarded to Mr. McLachlan and Mr. Michael for examination.

Hybrid Narcissi.—With regard to the spontaneous hybrid sent to the meeting on March 14th by Rev. C. Wolley-Dod, Mr. Henslow stated that the pollen was quite shrivelled and probably useless, as Mr. Wolley-Dod had found to be the case with other hybrid Narcissi. He sent also a spontaneous hybrid between *N. triandrus* and the Daffodil. The pollen of this also proved quite effete. He also sent flowers of *N. Johnstoni*, a supposed species intermediate between *triandrus* and the Daffodil, but it resembled the latter much more closely than the one mentioned above, as the corona was almost exactly that of the Daffodil, but of a paler yellow. The pollen proved to be very bad, but still many grains were apparently quite perfect. Mr. Wolley-Dod says that "it is found in various forms, having established an independent existence over large areas of Portugal and N.W. Spain." He adds that it has never been known to seed. The variety sent is called "Queen of Spain," and is the most abundant.

OLD BOTANICAL GARDENS.

REFERRING to these in his "History of Gardening," the late Mr. G. W. Johnson has recorded that "Previous to the reign of Elizabeth (1558—1603) horticulture was considered as little more than a mechanical art. Botany, previous to this period, was almost unknown as a science, and it must be acknowledged that botany is a chief part of the only foundation upon which an enlightened practice of horti-

botanic garden in Switzerland at Zurich in 1560; one was established at Paris in 1570; at Leyden in 1577, Leipzig 1580, Montpellier 1598, Jena 1628, Oxford 1632 (by the Earl of Derby). Sir Jacob and Sir Andrew Balfour endowed one at Edinburgh in 1680, and the Apothecaries' Company that at Chelsea in 1673."

We were led to refer to the work mentioned on reading a highly interesting and profusely illustrated article on the "Botanical Garden of Padua," in part 4, vol. xxii., of the present quarter's issue of the Journal of the Royal Horticultural Society, and we cite a portion of what is said by "Islander" on

THE OLDEST BOTANICAL GARDEN IN THE WORLD.

"In the year 1533, at the suggestion of Bonafede, a new chair was created in the University of Padua, and called 'Lectura Semplicium.' This chair was intended for teaching botany, and is with right claimed to have been the first of its kind in Europe to give public lectures on botanical science. Later on the want was felt of illustrating these lectures with practical examples, and in consequence in the year 1545 the botanical garden was created for this purpose.

"The botanical garden of Padua occupies an area of 20,664 square metres, in the middle of which a circular space, having a diameter of 84 metres, is especially reserved for the different families of plants, according to the natural order of Jussieu. Nearly the whole garden is surrounded by the Alicorno Canal, which at a certain place is captured, and by means of a hydrophore (dating from 1575) is made to pass through the whole garden. In the year 1593 leaden tubing was laid, and at present seventeen fountains supply the watering power of the garden.

"This marvellous old garden, the oldest in the whole world, has many rare plants to show, some of which are almost as old as the garden itself.

"Of these first and foremost must be mentioned the veteran *Vitex Agnus-castus*, which was planted in the year 1550, and was spoken of by Bauhin in 1650 as being then one of the sights of the garden. It is over 5 metres high, and has a circumference of 1 m. 80 cm. During the winter of 1879-80 the intense cold made it lose all its young branches, but after a rather hard struggle for life, and though its trunk is quite deformed and hollow, and its bark corroded, it managed to pull through, and is now as vigorous as ever.

"Next to this comes the famous *Chamærops humilis* (fig. 66) planted in 1595, and up to 1662 known by the Prefects (Directors) of this botanical garden by the name of *Palma humilis*; later, about 1720, through Pontedera, this plant became known as *Chamæriphe* (*Chamæriphe tricarpos*, *spinosa*, *folio flabelliformi*) and only since about 1737, when Linnæus in his '*Musa Cliffortiana*' called it *Chamærops*, has it here become known under this its proper name. This *Chamærops* is formed of twelve principal branches, measuring each about 65 cm. in circumference and reaching to a height of 9 m. 25 cm. As these proportions seem to be larger than those of this species in its wild state, this particular *Chamærops* received the appellation of *arborescens*. The strange fact about the plant is that it seems to have already attained its maximum height in 1720, when Pontedera in his '*Anthologia sive de Floris natura*' spoke about this plant as being 9 m. in height, and having only three main

branches, whereas in 1854 the number of branches is stated to have been nine; whilst the height, since it reached its 9 m., has hardly increased at all.

"When Goethe came to Padua on September 27th, 1786, this Palm attracted his supreme attention, and the thorough study he made of it served him as a basis for his '*Essay on the Metamorphosis of Plants*,' published by him in 1790. Padua, grateful to him for this distinction, recalls this fact in an inscription over the Palm house. [This inscription is reproduced in the R.H.S. Journal.] And when Boito, in 1881, gave his '*Mefistofele*' for the first time in Padua, he was presented with a wreath made of leaves belonging to this *Chamærops*, now always known here under the name of '*Palma di Goethe*.'

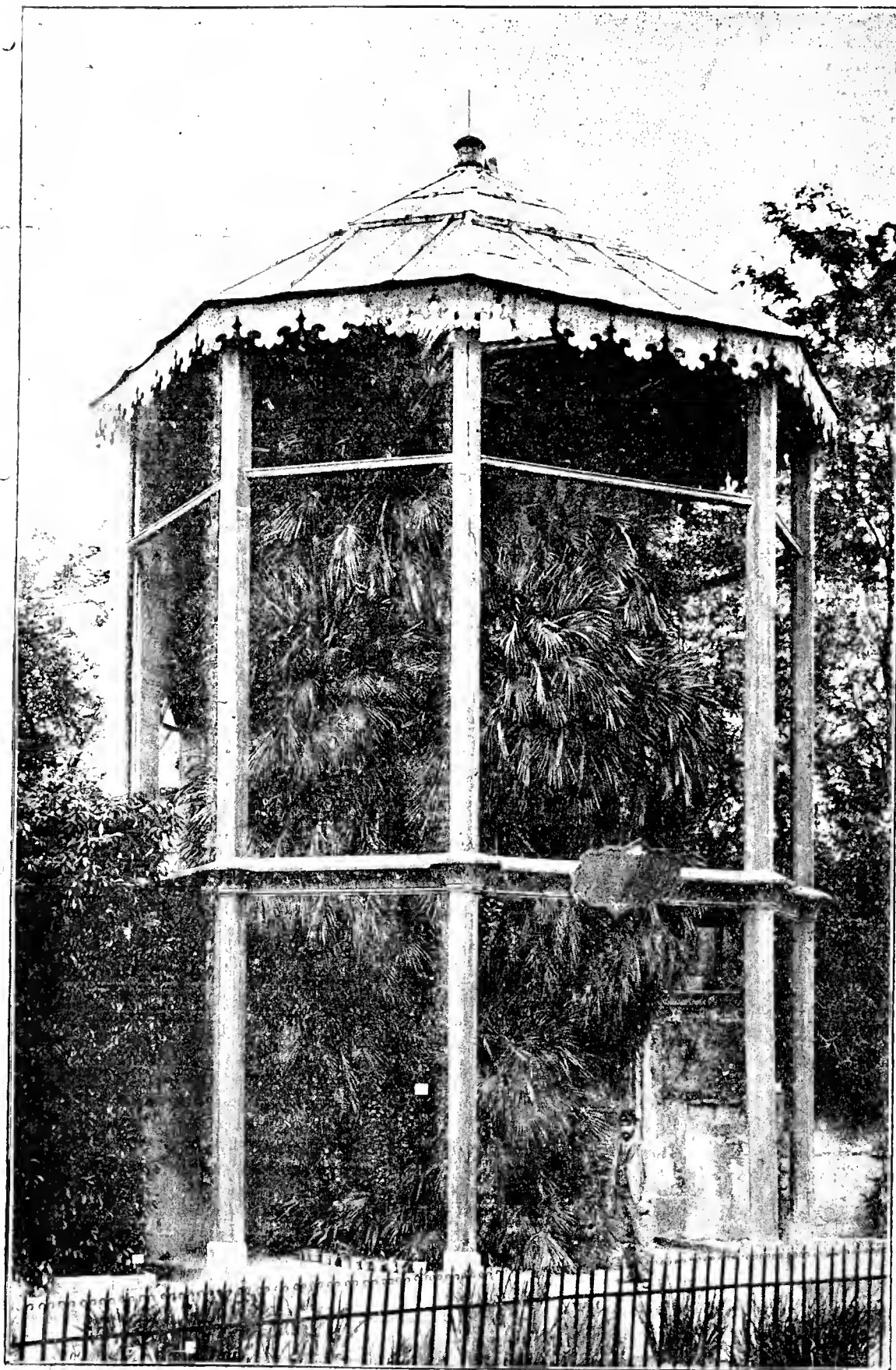


FIG. 66.—CHAMÆROPS HUMILIS AT PADUA, AGE 340 YEARS.

culture can be raised. In this reign England was enriched with the first regular establishment for the scientific cultivation of plants in the Physic Garden of Gerard (1547). It was, however, not in England alone that the study and cultivation of plants became more popular, as a desire for the improvement of a knowledge of plants pervaded Europe simultaneously at this period. Padua took the lead by establishing a public Botanic Garden in 1533. Lucas Ghinus at Bologna, who was the first public professor of botany in Europe, was a strenuous advocate of such institutions. By his influence a similar garden was established at Bologna in 1547, where Dr. Turner (who died in 1568) first imbibed much of that knowledge which rendered him eminent in this country. Gesner constructed the first

"Besides this plant Goethe was attracted by the sight of another one formerly known as *Bignonia radicans*, but in fact, considering Goethe described it as 'a blaze of fire, which with its large brick-coloured flowers densely covered the entire wall,' was in reality a *Tecoma grandiflora* (fig. 67), a plant which he had never before seen growing and flowering in the open air.

"But the plant which in this garden is the most conspicuous one in the eyes of the general public, is assuredly the magnificent *Araucaria excelsa*. It was bought in Milan at the age of ten years; it is now seventy years old and measures more than 20 metres in height, and 1 m. 10 cm. in circumference. The building which protects it has already been added to in height for the third time, and would have had to be elevated again, if, some years ago, its top had not been cut, as it will now again be in a few years, the expense needed for heightening the house not having been voted, because the present foundations of the building would not have borne any further addition to its height. This *Araucaria* is in perfect condition, as might be expected when such a plant is entirely under glass during the rougher months of the year: it is symmetrically covered with its feather-like branches, and nobody who has not seen so perfect a specimen can really understand the wonderful beauty of such a tree. The cutting of its top a few years ago had no influence on its general structure, only, one can see that as its branches become scarcer below, its tendency would be to grow vigorously in height. In order to admire its upper part perfectly, a stone staircase leads up for the first 9 metres of its height, and a balcony has been built all round the house, which is octagonal and measures 23 m. 50 cm.

"Then the old *Platanus orientalis*, though a permanent invalid, is still every spring full of leaves and later on of flowers and fruit. The base of its trunk measures 6 m. 50 cm., whereas 1 metre higher it narrows to 70 cm. It was planted about 1680, and is 18 m. high. Its trunk is perfectly hollow, and is large enough to contain several persons inside it; its bark is one mass of humps, knobs, and enormous warts, and the necrosis, from which it suffered and only got rid of a few years ago, left a longitudinal dead strip, forming about the fourth part of its bark."

There are, in addition, several other remarkable trees enumerated in the issue from which this extract is taken.

"For the students a lecture-room, capable of seating 200 persons, was constructed in 1842; and the illustrations for the lectures are contained in the numerous herbaria.

"Books and periodicals are also well provided, the library containing, amongst others, 164 works on botany, mostly used for the identification and nomenclature of plants; 8000 volumes on general botanical subjects, forty different periodicals, and other works like '*Flora Græca*,' '*Flora Danica*,' all the iconographical works of Reichenbach and Jacquin, '*Flora Fluminensis*,' Tenore's '*Flora Neapolitana*,' English botanical works, a complete series of the '*Botanical Magazine*,' Bulliard's '*Champignons*,' Martius' '*Palme et Plantæ Brasilienses*,' the iconographical works of Cupani, Duhamel, Host, Hill, Weinmann, Guallesio, Berlese, Blackwell, Salm-Dyck, Delessert, Waldstein, and Kitaibel, the majority of the '*Botanici Veteres*,' a complete series of Linnæus' editions, and, above all, the very rare edition of the '*Herbarium Apuleji Platonici*' (Rome, 1479), the oldest illustrated work on botany. Pritzl gives the date as 1493, and the name of the author as Pseudo Apuleius."

It will be observed that Mr. Johnson gave the date of the establishment of the Padua Garden as 1533, but according to the writer of the above article it was only "suggested" then, and "created in 1545," but this gave it a start of two years of Bologna, and thus the claim of the former appears to be substantiated as the "oldest botanical garden in the world."

We are indebted to the courtesy of the Editor of the R.H.S. Journal for the illustrations, and some gardeners may like to know that a metre (m.) is a little more than 3 feet 3 inches, and a centimetre (c.m.) about three-eighths of an inch.

FAULTS, FALLACIES, FAILURES IN FRUIT CULTURE.

THERE comes a time in life to most of us when we begin to need the aid of science, in the shape of glasses, to assist nature in the matter of eyesight; and I will at once confess that by gaslight I have to avail myself of these useful, but rather dreaded, aids when studying the pages of "Bradshaw." But the Journal—perish the thought! the

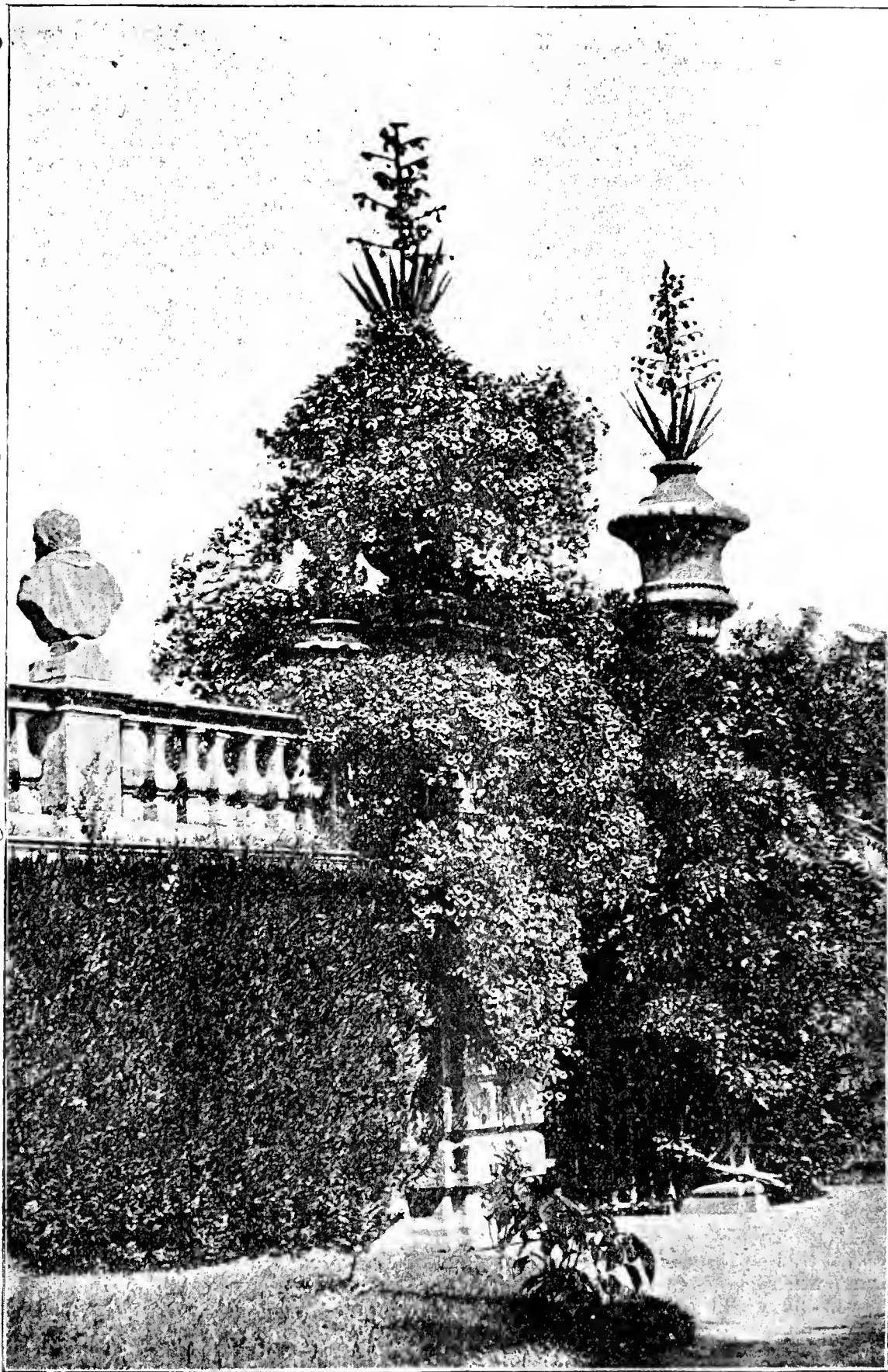


FIG. 67.—TECOMA GRANDIFLORA AT PADUA, AGE 139 YEARS.

Journal is clear of print, and generally clear of expression. Nevertheless, as I studied its pages awhile ago I rubbed my eyes and doubted if I saw clearly, or whether I did not need glasses to interpret what lay before me; then I followed the example of lady readers, and looked for the signature at the foot, and I saw it was that of my neighbour—and no doubt able cultivator—"Professor Luckhurst" (as the notices posted in the next county have it).

To answer the Professor's question, I never heard anyone in the Midlands say "Do not procure trees from the South;" nor did I ever hear of anyone saying such a thing; though, on the other hand, I am constantly being told that Professor Luckhurst rarely fails in his lectures to point out that trees from the south are the only ones worth

having. I have not yet learned why; but although I am open to learn, I am doubtless, as a dweller in the Midlands, somewhat prejudiced in my views. But, to put this question aside, for really it does not need argument, as every practical man who knows anything about fruit trees knows as well as he can be told, that the question of North or South has no value in the matter, whilst soil and culture may have a good deal.

Let us turn to the next point, The manuring of nurseries. Where in the world—no, I mean in England—did the Professor get his “facts” from? I have some little experience of nurseries, and have visited many, but the picture of the abnormally rich land overdone with manure is not the one which I could call to my mind with any truthfulness when recalling my wanderings amongst nurseries. True it is that once in my life I saw a nursery established on old market garden land so rich in manure that it was necessary to double crop the land with vegetables to prevent the trees growing too much, and even then they went mad and produced growths 9 feet in length, which I doubt me would not withstand the attack of a severe frost, nor should I have chosen such trees to plant on a poor soil; but that was in the favoured South. Set against this the hundreds of nurseries and the many hundreds of acres therein which cry with no uncertain voice, as one passes by, “Muck, give me muck.”

One hundred tons per acre! Where outside of the radius supplied by London could it be obtained? Who of us poor midlanders could afford such a luxury? I await the answer with eagerness. I should like to give my land a treat of this kind once in a way, and I think it would bear it. But those trees from the South, are they grown without manure, or is it only in the North that dung grows trees which are so fat that they are apt to melt on a hot day, and fail to grow when transplanted? Oh! my brother nurserymen in the South, you must tell us the secret you possess, it would make our fortunes could we grow good trees without manure.

But when one reads on one finds that, after all, the manure is the right thing, for nurserymen are blamed for advising planters not to use manure in preparing soil for trees. No practical nurseryman would try to lay down a hard and fast law of this kind. If trees are planted in a rich old garden soil, well and good, they do not need manure if the nurseryman has done his duty by them, and, saving a mulching, would be better without it; but, surely, if the question be of planting a newly acquired allotment ground recently broken up from a ploughed and impoverished field, the same advice would not hold good.

One word more. There are “failures,” and I would name as reasons for them poor half-starved trees with no constitution to begin with, also there is such a thing as badly prepared soil, as well as ill-chosen damp situations, badly planted trees, and (most frequently found of all) neglected trees, which, once planted, or stuck in the soil, have no further attention paid to them, around which the hoe does not work and the soil is not cultivated; but it is a “fallacy” to suppose that well grown trees in full vigour, well rooted and well ripened, are to be despised, or that they are more likely to stand still when transplanted than starvelings would be under similar conditions. And as to “faults,” well, we all have them, but certainly we midlanders do not number amongst ours the application of 100 tons of manure per acre to nursery land; nor do southerners, who prefer well grown, sturdy and thrifty trees, “full of fibre,” to long, strong, sappy branches, and correspondingly long, strong, fibreless roots, for one condition is the complement of the other.—A. H. PEARSON, *Chilwell, Notts.*

[Some delay, unavoidable under the circumstances, has occurred in the publication of this rejoinder to the article on page 189, March 9th, to which interested readers may advisably refer. We may say a word on one or two points. (1) We should be surprised if Mr. Luckhurst described himself as a “Professor,” but not in the least if the authors of published announcements should do so to arrest attention, as the habit is not uncommon. (2) In many conversations with Mr. Luckhurst we have never heard him say anything to the effect that “trees from the South are the only ones worth having;” but we have heard him combat alleged local opinion that trees from the South would not succeed in the North. (3) We know of trees from the Midlands and the North succeeding admirably in the South, and trees from the South flourishing equally well in the North. We also know of failures of southern trees both North and South, and northern trees both South and North. So does Mr. Pearson. So does Mr. Luckhurst. So do many gardeners, and not a few nurserymen. It is pitiable to see thousands of good trees spoiled by the blunders of incompetent planters, pruners, and neglectors. It is not less pitiable to see so many worthless trees planted—cheap “culls,” that ought to be burned. We could buy 100 of such trees in an hour, the residue of hundreds more which have been exposed root and branch to the weather for the past three weeks. Mr. Luckhurst has proved his point, that he can grow southern trees in Derbyshire, but he did not prove the failure of midland trees in the same plot, because “the whole of those planted were procured from the South,” and Mr. Pearson is fully entitled to the insertion of his letter]



ROSE SHOW FIXTURES IN 1899.

JUNE.

- 14th (Wednesday).—York†.
24th (Saturday).—Windsor.
27th (Tuesday).—Westminster (N.R.S.).
28th (Wednesday).—Bath, Maidstone, and Croydon.
29th (Thursday).—Canterbury, Eltham, and Norwich.

JULY.

- 1st (Saturday).—Crystal Palace (N.R.S.).
4th (Tuesday).—Gloucester and Harrow.
5th (Wednesday).—Ealing and Hanley*.
6th (Thursday).—Colchester (N.R.S.).
11th (Tuesday).—Hereford and Wolverhampton†.
13th (Thursday).—Brentwood and Helensburgh.
20th (Thursday).—Salterhebble.
25th (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSE NOTES—PRUNING.

“SHY-GROWING varieties must never be hard pruned, as there is a possibility of crippling them.” Such is the dictum of “Rosarian” on page 237 of the *Journal of Horticulture* of 23rd ult. “When doctors disagree, who shall decide?” Let me give the opinion of a few of our most eminent Rose surgeons.

1, The Rev. H. B. Biron writes in “The Gardener”—“The weak growers cannot be pruned too closely.”

2, Rev. A. Foster-Melliar, in his exhaustive paper read at the National Rose Conference, held in July, 1889, speaks of what he terms the “golden rule” in pruning. Here are his words. “The next question is how many buds are to be kept on each shoot retained, and the answer is to be found in the golden rule of pruning—that more buds are to be left on each shoot in proportion as the plant, both as a variety and an individual, is strong, and less in proportion as it is weak (the italics are mine). To a novice in Rose growing it appears strange at first that we should cut away almost all there is left of a weakly growing and precious variety, which would seem to be almost exterminated by such severity, and yet leave longer shoots on a strong sort, which seems better able to withstand the rough treatment; but the rule is, nevertheless, in strict accordance with the law of Nature, Darwin’s survival of the fittest, and the law of God—‘Whosoever hath, to him shall be given.’”

3, Mr. George Paul says—“Moderate growing Roses should be pruned closely.”

4, Mr. Thos. Rivers’ opinion is as follows:—“The majority of people do not understand the object aimed at in pruning. Roses should be cut back according to strength of shoots or variety. The stronger they are the longer they may be left.”

These four opinions of such eminent specialists must surely suffice to combat the soundness of “Rosarian’s” own judgment.

CATALOGUE INCONGRUITIES.

The question of pruning leads on to another closely allied to it. What is meant by vigorous, robust, and moderate or dwarf growing Roses? This is only written for novices.

The vigorous and robust are perfectly distinct in growth and habit; the dwarf, or moderate, differ from both.

Among the *vigorous* I might name the habits of such as Dupuy Jamain, Abel Carrière, Charles Lefebvre, and Duke of Edinburgh.

The *robust* would be represented by such varieties as Baroness Rothschild and her marvellous white daughter, Merveille de Lyon, Etienne Levet, Marquise de Castellane, and perhaps Marchioness of Londonderry.

Among the *moderate* we find E. Y. Teas, Gustave Piganeau, Xavier Olibo, and Monsieur Noman.

Yet what do I find in a catalogue, one issued by a very large firm? I find the following Roses described as *vigorous*—Augustine Guinois-seau, Monsieur Noman, Baroness Rothschild, Captain Christy, Duke of Wellington, Emilie Hausberg, Etienne Levet, Gustave Piganeau, Xavier Olibo, and Louis Van Houtte; while Her Majesty is dubbed a “bad grower.” I think that when I read in this nurseryman’s

catalogue Cheshunt Hybrid and Thomas Mills as "robust," Gustave Piganeau as "vigorous," and note that the description "moderate" not considered necessary when applied to the growth and habit of a Rose tree, then I shrug my shoulders and say, "Well!"

We will suppose a ease in point. We have often seen a couple of dear ladies of uncertain age at the local Rose Show intensely interested, examining closely through their glasses each flower. "Maria, do look at this one, did you ever see such delicacy in colour and form? Please note it down, I'll spell it out while you write." It is at last written down, "Marguerite Boudet." This, with several others which have attracted the eyes of these good ladies are duly jotted down. Now, Maria and her maiden sister are nothing if not practical, and so they take in between them a gardening paper; they digest what they read, and being warned to grow only vigorous growing Roses, turn to the printed catalogue of the local nurseryman and find perhaps marked as "vigorous" the Marguerite above mentioned, also Louis Van Houtte, Marie Finger, Horace Vernet, Xavier Olibo, and others of Queen Flora's beauties. Twelve months later, and how great is the disappointment! I can personally vouch for many such disappointments during a period of nearly thirty years' experience within the Rose ring.

One of the most accurate catalogues in which the habit of each Rose is most fairly described is, to my mind, that issued by Messrs. Wm. Paul & Son, of Waltham Cross. For instance, he classes among the *moderate* growers the following: A. K. Williams, Duchess of Bedford (one of this firm's own raising), E. Y. Teas, Gustave Piganeau, La France, Louis V. Houtte, Marie Finger, Victor Hugo, Sultan of Zanzibar, Xavier Olibo, and others. This is as it should be, and yet in one catalogue referred to the 1st, 2nd, 5th, 7th, 8th and 9th of the above are generally described as possessing a vigorous habit.

ABOUT TEAS.

To change the subject, or rather cross the road, for we grow our Teas on the other side, on the high land looking towards the neighbouring county of Kent, in which the Rev. H. B. Biron lives, and from whom I will again cite as follows: "With Teas proper, it seems the wisest plan is only to remove the very weak or crowded shoots. Many years I have adopted this method, and have found it better than either close or even moderate pruning. It is impossible to say from what part of a Tea Rose a good shoot will spring. *Often they appear from an old piece of wood with no perceptible eye*" (again my italics).

I think these words would lead to an interesting discussion in your pages, and practical evidence given in time for the pruning of our Teas this month. With the concluding words of the paragraph I am quoting I quite agree. "The more wood a Tea Rose has the better the flowers are. I may here say that I heard lately from one of our most successful Tea growers that he would have no more hard pruning." Is it possible that this grower lives in Ceylon?—J. A. W.

NEW SEEDLING PEDIGREE ROSES.

ON page 237 of the *Journal of Horticulture* I gave the names of five new Roses to be sent out in the coming May. Other novelties seen last season are also to be distributed, but the following are of such extra merit, and so indispensable to all exhibitors, that a note should at once be made of them, and so save time in the near future, this, of course, applying particularly to those who had not the pleasure of seeing some of them exhibited last season.

Ulster.—A grand variety in every way as regards habit of growth (which is robust) and freedom of bloom. It is a H.P., with blooms of an intense pink; large size and perfect form. Judging from the plants in bloom, this should succeed where Her Majesty fails. This variety was awarded a gold medal in 1897.

Bessie Brown.—This charming Hybrid Tea has met with admiration wherever shown, and deservedly so, for nothing more beautiful could possibly be seen, the shell-like broad petals, of a flesh-like tint, almost looking artificial, either by day or night.

Mrs. Mawley.—Wherever this lovely Tea variety was seen last season, there was only one opinion—viz., that it had come to stay. The blooms are of the finest size and form, and the growth is excellent. The colour is of a soft pink, with lighter shades of pale gold running through, giving the flower a graceful appearance. The two latter were awarded gold medals in 1898.

Shandon.—Another H.T., somewhat after the style of the popular Countess of Caledon, sent out in 1897. This new variety has soft rosy-pink shell-shaped petals, silver tipped, with slight reflex, and is highly perfumed.

In addition to the above four I had the pleasure of thoroughly testing the behaviour of other new seedlings not seen outside the exhibition board.

Mildred Grant.—This is a lovely pure Tea variety. Anything more free blooming I have not had the pleasure of seeing, flowers measured being 4 inches deep and 7 inches in diameter.

Alice Grahame.—This flowers profusely. The colour is almost pure white, save for the faint lemon tinge.

Duchess of Portland.—This has been by some persons considered identical with Kaiserin Augusta Victoria, but growing side by side one had not to look twice to see the difference. The Duchess has a more robust habit, whilst the flowers are of a more intense canary yellow.

Countess of Annesley.—This is a fine variety of a beautiful delicate flesh tint.

Mrs. David McKee.—This is a free growing variety of a creamy white shade with a pink centre.

Many continental varieties were on trial, and several of promise were noted, but as my notes on new seedling pedigree Roses are written with a view to drawing attention to the varieties which are likely to be seen in fine condition during the present season, I must leave the Continental and other sections until I can see them again. One thing that we must admire in Messrs. Dicksons is the thorough earnestness they put into their work, and the courtesy extended to all visitors.—A VISITOR.

WINTER GREENS.

THE brevities which appeared under this heading by "E. D. S.," page 236, were interesting as well as practical, but I could not help being struck with the mixture that supports the text—"Winter Greens." Cauliflowers and Broccoli certainly might take offence at such a title, for they have an aristocratic bearing quite unknown to the more humble cottagers' and servants' hall vegetable, and gardeners, as a rule, would not know or recognise them described as "winter greens." The latter term cannot be taken to represent comprehensively the varieties of the Brassica family, because from all time it has been taken as descriptive of the various sorts of *Borecole*. That these are a splendid vegetable for everyday use no one can dispute, for they do, when purposely treated, withstand the frosty elements better than most vegetables, and supply the table when others fail, and when variety is by no means extensive.

In these there is a great diversity of character, and much stress and importance comes from any slight or variable character that the hybridist may impart; but, after all, a little more curl or other slight variation do not make their appearance any better on the table when cooked, and there would seem to be as many flavours as there may be required to suit everyone. There is not, to my mind, any among new or old, tall or dwarf, curled or plain, that can surpass the old Cottagers' Kale in point of quality, freedom in production, or hardy constitution. I will not say that this supplies every need—certainly it does not—for its season of usefulness does not extend late into the spring, and therefore it requires a companion to carry on the supply when the old Cottager persists in supplying flowers instead of edible "greens"—a feast for the eye instead of the body. Variety, however, affords a measure of interest to almost every gardener, more or less, according to the means at his disposal, and will always remain so.

I take it to be a matter of opinion whether drill or broadcast sowing is adopted. "E. D. S." evidently favours the latter course, judging by the advice he gives in his notes under notice. There may be exceptions taken to both practices, and while one may argue in favour of the one, another would stand by the other with the same self-satisfaction. It is, therefore, unnecessary to raise any debating argument in favour of one, or against the other. Personally I adopt both when circumstances require it, but in the open border, when the maincrops are sown, and there are many varieties to deal with, I prefer drills, because I think it is simpler, and the soil can be kept free from weeds so much more easily. Thinly sown in beds broadcast better rooted plants may be drawn for planting, provided they are kept weeded, but when both are allowed to grow together, weeds give one the impression of having greater priority of space, and the plants in their effort to rise to the occasion become sometimes long-legged and awkward for planting purposes. In drills greater facilities are afforded for dealing adversely with the one, and beneficially to the other by the occasional or frequent use of the Dutch hoe.

In small sowings of early vegetables, for which selected spots are sought, broadcast sowing is most suitable, and the same occur with the latest Winter Greens, Broccoli, Savoys, and Cauliflowers. They are thus more easily protected against insect and other interferences, and neither late nor early sowings are permitted to stay so long in the seed bed as maincrops often do, simply because in each case vacant ground is more easily found for planting them.

Just as germination commences, if not before, protection must be given against birds, says "E. D. S.," with which I entirely agree. After various disappointments I now put on nets at the time of seed sowing, from which comes greater ease of mind and better results. Slugs, however, are not so easily kept at bay, at least I have not in my past experience found it to be so, and large earthworms are in showery weather almost as troublesome as slugs.

Early sowings outdoors of Brussels Sprouts, Cauliflowers, and Turnip have felt the pinch of the present wintry weather, even in positions specially favoured by warmth from sunshine and protective and lofty walls. The frost, though severe, was not so destructive until the snowstorms supplied moisture to the soil. Tender seedlings endure the cold but on their moistened leaves frost takes a serious advantage, so much so that their future usefulness cannot be easily gauged.—W. S., Wilts.

making progress now and growing well in the time, however, has arrived for those which begin to coil their roots round the ball to have the pots, which must be thoroughly clean and dry, and the plants employed ought to be also dry and clean, and the pots, covering them with rough parts of moss. The potting material must be composed of turfy loam broken up fairly small. To this add a similar quantity of decomposed manure, of sand and broken charcoal. At this potting add special manure to the bushel of soil will be a good one to build up stout wood, but not proving too strong. The whole should be thoroughly mixed, and

the plants it is essential that they be moist at this time, examine them the previous evening, or at least the day before, which are dry some hours before it is necessary to pot them. The pots do not require to be too large, and will prove as effectual in preventing superfluous moisture as a quantity. Place the plants so that they will be lower than previously when the soil is important that the soil be made firm about the plants in a manner of doing this is to first place a little soil and making it firm with a blunt stick. The quantity of soil regulated by the size of the ball of roots, so that it is not more than it ought to be. When the plant is fixed in the pot, fill in soil round it, shaking it down and making it firm with a blunt stick. More soil can now be introduced and made firmly also. Hard ramming is not required. If the soil is made as firm as the older ball of soil and roots, the plants will meet all requirements.

Of course, that previous to this potting the plants should have well ventilated treatment in a cold frame. The plants must be returned after potting. The frame in which the plants can have all the headroom, and the lights drawn off to expose them fully to the sun, and require it and favourable weather admits. Frames are, of course, the most convenient, but the plants should be potted on a hard ash base near a temporary framework erected over them on which the plants could be placed.

For potting water is not needed very frequently, especially if there is no hot sun, syringing will be necessary. The plants should be kept rather dry, and attention may be assisted to commence vigorously. At this time, air must be given in gradually increasing quantities, and the plants watered immediately the soil dries. The plants should be fully exposed the better. Rough, cold winds are a enemy at this season, and though full exposure is favourable in favourable weather, yet it is advisable to protect the plants in inclement periods. Neat, light stakes must be placed against them to the stems at the time of potting. It is known to be very late in making their first break, and the points pinched out to induce them to do so earlier.

For bushes must have the points stopped at the time the growths resulting have grown to the same length, and may also be stopped. The aim of the cultivator is to secure plants with numerous stems, allowing

The schedule of the thirtieth annual exhibition of the Midland Society is before us, and, as usual, it has been made with care and judgment. Nearly five dozen classes are entered, the principal ones being devoted to the autumn queen, to fruits, plants, and vegetables. There are open air and the prizes ought to be sufficiently good to insure keen competition. We observe that to the money, added in some classes, and fortunately all the articles will be of everyday value to the winners. The Show is on November 15th and 16th in the Town Hall. Mr. W. Road, Rugby, continues to occupy the position of secretary, and furnish all necessary information.

SEASONABLE NOTES ON

EARLIEST FORCED TREES IN POT

THE very early varieties, Early Violet, St. John, are now ripening the fruit on trees started in November, and full exposure to the sun. These Figs are well adapted for supplying early fruit, which is highly appreciated, being extremely wholesome and beneficial to health, containing many seeds. Those fruits now showing signs of ripening have the ventilation increased and be exposed to the sun as far as possible. All cannot have this, but judicious stopping and tying the growths will help them. The temperature at night with a little air, 70° to 75° by day artificially, and full sun. Top ventilation ought to be given at 70°, increase the moisture maintained whilst the fruit is swelling, and cease when ripening commences, and a circulation of air secured constantly, for fruits ripened in a close moisture. Where syringing has been practised red spider makes its appearance, where atmospheric moisture is reduced it spreads rapidly, and effort must be spared to keep the foliage clean up to the top.

Supplies of water are needed at the roots at all stages, and may be syringed at times during the ripening season, but not fruit ripe at one time. For private use Figs should be gathered when gathered, but for marketing purposes or for sale gathered before they are fully ripe. Brown scale is common on the young shoots, and extends to the leaves and fruit, and is under by the timely use of an insecticide, carefully brushed or sponge on the first appearance of the pest, and be treated similarly; the thing is to contest insect before it becomes firmly seated on the plants. A light brushing with water pipes with a cream of sulphur and skim milk has been used on white fly, red spider, and "spot" fungus.

SUCCESSION HOUSES.

Trees permanently planted in borders require more nourishment in proportion to their vigour, their crop area. With the roots restricted to a narrow border, a little of water or liquid manure will be required; those in a large border will need less, but large trees and borders take in Fig culture. Syringe the trees twice a day, the night temperature range from 55° to 60°, 70° to 75° by day of sun, and 80° from sun heat, closing at this degree at 5° to 10°. Keep the growths regulated, thinned at the top, and stop the leading growths at the fifth leaf, partly to stop in the first-crop Figs, and partly to induce good root crop fruit. When the leading growths break again, stop the main shoots to one leaf by taking out the point. Successional growths may be treated similarly, also, these being pinched at the fifth leaf, and afterward there will not be room for them to go forward.

LATE HOUSES.

Trees in these and wall cases must now be tied

...a strong and sturdy constitution, but I
 ...were bought the year before last, and last
 ...them, and then selected all pieces I thought
 ...was thoroughly prepared for their reception,
 ...being placed beneath the top spit. Quite
 ...no roots, so it was something like inserting
 ...plant grew, which I largely credit to the
 ...r I placed in a position, facing due south, a
 ...and in this frame after manuring the soil,
 ...thin about 9 inches from the top, the plants
 ...apart, and were syringed for about
 ...ff until November, when they were
 ...ght drawn up and down to admit
 ...possible. The roots were kept on
 ...and the result has been more than
 ...Druidstone.

...ded a few flowers with the above
 ...inly amongst the finest we have
 ...substance, and richness of colour,
 ...was not to be despised.]

KING ALFRED.

...e Daffodil for 1899 has only just
 ...flowers have been exhibited at the
 ...vers. Naturally they have been
 ...per than quantity, and have mostly
 ...pots. A few flowers from out of
 ...ey will now rapidly become more
 ...rch 28th, the Narcissus Committee
 ...s year, and before rising recom-
 ...te to King Alfred (fig. 68), which
 ...Ottery St. Mary, Devon. It is a
 ...er, partaking somewhat of the
 ...and maximus, and will be welcomed
 ...s. The whole flower is of great
 ...rich yellow colour. The foliage is

FLOWERS.

...rable amount of moral courage to
 ...h the ground covered with an inch
 ...eter down to 20° on the wall 4 feet
 ...e are a few things which I should
 ...brings its various experiences, and
 ...es us something to say. By spring
 ...very earliest—they are past and

...rt of paternal affection for the lovely
 ...ief one in my garden—I mean, Chionodoxa
 ...sixteen years since I was the means of intro-
 ...in England, with the assistance of Mr.

My border, of about 36 feet by 1 foot, is now
 ...bright sun which we have had lately has been
 ...it has not the deep blue of some of our
 ...cœrulean blue mixed with white. C. sardensis
 ...local variation; the blue is deeper, and not
 ...the type. C. gigantea, or grandiflora as it is
 ...bears out its title by the larger size of its
 ...be sparingly produced, at least with me, there
 ...stem so that it is not to my mind nearly as

Iris reticulata.—This beautiful Netted Iris has been in
 year, and I find from communications in the various pa
 been so well nigh everywhere, whether from districts wh
 has been saturated with moisture, or from those where,
 eastern corner of England, there has been a deficiency of
 fill dyke did not bear out its character this year, and, so
 been a dry month. What is the reason then, that notw
 variation in climate and soil, the same thing takes plac
 earliness and lateness in flowering? I have none of the o
 this Iris, and I do not think that those I have seen ar
 either in pots or the open border.

Daphne Mezereum album.—This sweet-scented plant is



FIG. 68.—NARCISSUS KING ALFRED.

attractive of early flowering dwarf shrubs, yet one does
 in gardens. The normal form is seen in many a cottage
 in large gardens the white variety is scarce.

Scoliopus Bigelovi.—I put this down rather as one of t
 ought to be in flower rather than the one which actu
 attribute this to the drought we had last year, and I fe
 advances we shall find many a gap in our herbaceous bor
 from the same cause. I notice, for example, that my bor
 and Polyanthus is in a very crippled condition. My g
 sunny one, and Primroses like shade. During the lo
 experienced last year the plants had a most miserable a
 thought many of them had succumbed, but when the au

BIRMINGHAM GARDENERS' ASSOCIATION.

At the fortnightly meeting held on the 27th ult. (Mr. Walter Jones in the chair), a paper, contributed by Mr. Peter Blair, gardener to the Duke of Sutherland, Trentham Hall, Staffs, entitled, "Grouping Plants for Effect at Horticultural Exhibitions," was read by Mr. James Deans. In his preliminary remarks, the essayist referred to the growing popularity of the grouping of plants for effect, both for house decoration and in the exhibition tent, and strongly advised the decorator to utilise Nature as the basis of his conceptions.

The essayist proceeded: "If the earliest races of mankind had not been amazed by the grandeur and magnitude of the forests, they would have failed in every particular to have been horticulturists, of which ancient history confirms that they were; it is the life of the beautiful you must acquire if you do not already possess it. Unless you have a poetic mind, you cannot realise the harmonious alliance of form and colour. A man must have a poetic feeling, and must be capable of admiring the beauty and grandeur which one meets with in the vales and woodland scenery; rough and wild as it may be, it is Nature, and Art will improve Nature. As one walks through the woods and lands, numerous conceivable designs and information can be gained. Study intensely all you see, fix upon whatever attracts your sympathy, and use all the art which you have acquired by practice. To fix your impressions, so as to be able to reproduce it in grouping of plants, you must make your group solid and bright, real and poetic. The skilful arrangement is, to my mind, a feature quite on a par with the individual merits of the plants. Only in the presence of such a vast array is it possible to understand how much beauty is conferred upon plants and flowers by the fine art of combination. The man who combines well is quite as valuable to the community as he who originates, for although most people may be quick to recognise the charm of a particular Lily or Rose, even the most experienced gather quite new ideas from felicitous blendings."

After advertizing to a multiplicity of plants suitable for decorative purposes, Mr. Blair continued:—"Do not copy your neighbour, but try to copy Nature. You never saw two plants growing in close proximity to each other exactly the same height, and you never saw two pieces of natural scenery alike, so strive to avoid all similarity. I have often seen beautiful groups spoiled by overcrowding, or having too many valuable Orchids and other choice plants at their disposal." Such accessories as rustic arches and bridges of cork bark, which have of late years come into vogue, did not find favour with the essayist, as he considers that they are unnecessary adjuncts, which give the groups a sombre and artificial appearance, that is not in harmony with refined taste. Referring further to the artistic arrangement of groups, he pointed out that it is not always the choicest and most valuable plants that conduce to success, and that the very finest group he had ever seen was quite free from pretentiousness in respect of money value, it having been arranged by Mr. Samuel Thacker, of Nottingham—an amateur, who possesses an inborn genius for effective grouping. Doubtless one of the chief reasons for the introduction of the "Cypherian" rustic arches or bridges was for the more natural disposal of such as especially dependent flowering Orchids and Ferns, and thus imitate their natural habitat.

An interesting and animated discussion followed, there being a diversity of opinion regarding the introduction of cork bark arrangements in groups.

THE "FLOWERS OF THE WEST."

SOME interesting particulars are given in the April "Royal Magazine" regarding the flowers that come from West Cornwall and the Scilly Islands to the London market. The "flowers of the West" hail from two principal districts, the Scilly Isles and the region round about Penzance, the former being by far the more productive of the two. The climate of the Scilly Isles might almost be described as "tropical," chiefly owing to the great influence which the Gulf Stream exerts upon it, and the Islands are, therefore, admirably situated for the cultivation of flowers, which blossom many weeks earlier than in England. Far and away the chief of these flowers are the Narcissi, Gladioli and Wallflowers, however, are also grown, and the latter abound round Penzance.

BY MAIL AND SPECIAL.

From the Scilly Islands the flowers come by steamer to Penzance, thence as a rule by the 4.50 P.M. mail, which reaches Paddington at four o'clock the next morning. But it frequently happens that in the height of the season an extra load of flowers arrives from the Scillies too much to carry by the mail train. In this case one or more specials have to be despatched. If over 10 tons of flowers are to be despatched a special is generally necessary. All the flowers which leave Penzance do not, of course, find their way to Covent Garden. A large proportion go to Manchester and Birmingham, where they secure a very ready market. The season for Scilly flowers is roughly stated from January to Easter.

THE TRADE FALLING OFF.

The following is a list of the number of tons of flowers conveyed from Penzance by the Great Western Railway during the last few years:—

Year.	Tons.	Year.	Tons.	Year.	Tons.	Year.	Tons.	Year.	Tons.
1894...	381	1895...	293	1896...	514	1897...	480	1898...	296

It will be seen that there is a considerable falling away during the past two years. This is said to be accounted for by the fact that the soil of the Scilly Isles has been so taxed with the production of flowers that it has seriously deteriorated.—("Westminster Gazette.")

ROYAL GARDENERS' ORPHAN FUND.

I QUITE agree with your correspondents, Messrs. J. B. Stevenson, page 222, and J. Brown, page 242, as regards the difficulty of getting gardeners to take any interest in the above society. I have asked dozens to become subscribers, but have been met with the same answer: "The Fund is of no benefit to me! My children stand the same chance as those of subscribers!" This ought not to be. It is a good suggestion of Mr. Stevenson's, that as many votes be given to a candidate as there were years during which its father subscribed; also if there be two children of one family elected, they must be the sons or daughters of subscribers only, and that only one child of a non-subscriber be eligible. As regards distance from headquarters, I assure all gardeners that is no object worth a moment's thought. I write after long experience, and more than one attendance at the annual meeting. Never have I seen any of the so-called "string-pulling," but I have seen candidates living in Scotland and Ireland elected, whilst those living in London suburbs were left out.

Again it is said "We have no voice on the Committee, we have no voice in the management," but surely it is quite plain every subscriber cannot be on the Committee? I hate these side stabs. Let any subscribers who are dissatisfied with the working of the society go to the annual meetings. They will be made heartily welcome by the Committee, and the workings of the society explained to the full. I went first an utter stranger, and every courtesy was shown me, and I was given every chance to say my say, and made to feel that though a stranger I was among friends. I would gladly learn others' experience; but if we cannot all meet in Fleet Street, with your kind permission we can give our opinions in your columns. I would in conclusion, congratulate Mr. Stevenson on his four subscribing gardeners; I have only two, out of over sixty new subscribers that I was so happy as to enrol in 1893. Will someone with the good of the "Orphans" at heart try and beat that number in 1899?—JNO. MILES.

[We think Mr. Miles, or anyone else who obtains over sixty annual subscribers to this excellent charity in a year, is deserving of a medal for humanity to distressed widows and children.]

AUSTRALIAN BLACKBERRYLAND.

BLACKBERRIES are so intimately associated with leafy hedgerows in English country lanes that the idea of their growing in rich luxuriance in a land where the order of natural history, as known in the Mother Country, is popularly supposed to be reversed, where the stones of Cherries grow outside the fruit, and trees shed their bark instead of their leaves; yet there is nothing strange or incongruous in English wild fruits thriving in a country where every description of fruit and flower known in Great Britain thrives in perfection. The Sweetbriar, such a favourite in English cottage gardens, grows so rapidly in Australia as to become an agricultural pest, and in parts of New South Wales the Blackberry is so prolific that the fruit is gathered by the ton, in place of the bushel or hundredweight with which English Blackberry gatherers are familiar.

The Blackberry is finest and most abundant on the coast a few miles south of Sydney; and Bulli, one of the leading coastal townships, inhabited chiefly by miners employed in the neighbouring collieries, is rapidly becoming a centre for the annual export of many tons of the delicious fruit. Rising gradually from the coast are the extensive Illawarra Mountain ranges, and in not a few places on the slopes of these, on the lofty summits, and in clearings, the Blackberry bushes occupy many acres of ground. Paddocks which have been cleared and fenced, for cultivation or pasturage, offer no bar to the advance of the Brambles. In more than one instance owners of land have long since ceased to fight the growth, which even bush fires but temporarily retard, so find it more congenial to lease their holdings for a small rental to the pickers, who, as a rule, have anything but an easy time of it. The bushes grow in a most irregular way, presenting in most cases a compact mass of Thorn and Briar many yards deep and several feet high. To reach every part of this mass of entanglement is the Blackberry picker's aim. Yet he succeeds in doing so, and may spend a day in one spot, forcing his way through the bushes as best he can. Generally, he will cut a narrow track to the heart of the bushes, and, establishing a centre at that point, "work" the bushes cleanly and systematically. Billies, buckets, and tins receive the fruit, which may then have to be carried some distance, perhaps right into the township, before being disposed of. Most of the Blackberry pickers are coalminers, and they have the assistance of their wives and families.

In 1894 four tons of Blackberries were sent from Bulli to Sydney. In 1895 the quantity was 17 tons; in 1897 it had risen to 28 tons; in 1898 to 35 tons; and this year (1899) it was expected to reach 100 tons. The Blackberries are purchased, as they are picked, by a local dealer, who finds the demand already exceeding the supply. The berries are collected in carts stationed at suitable points, and sent, packed in tins, to Sydney. In some instances 30s. per ton is paid for the right of entering lands and picking the fruit. Carting is estimated to cost 10s. per ton, and £9 6s. per ton is paid the pickers, being at the rate of 1d. per lb. That there are some smart pickers in the district may be gauged from the fact that the net gain to one family in a single fortnight has been £6. Another good family of pickers has delivered 400 lb weight of fresh Blackberries, the result of one day's work. With the exception of Western Australia and Queensland, the bulk of the jam made from the Bulli Blackberries is

consumed in New South Wales, the duty on sugar prohibiting much export.

Allowing for evaporation of the water in the fruit, it is computed that one ton of Blackberries will turn out about 1½ ton of jam, or 4000 1-lb tins. The greatest demand for Blackberry jam appears to be in the Newcastle district—the Australian “black country,” and chief source of coal supply in the southern hemisphere.—J. PLUMMER, *Sydney, N.S.W.*

BUD DROPPING IN PEACHES.

MR. H. MARKHAM on page 252, in a note respecting the best Peaches, refers incidentally to bud dropping. He says he is at a loss to know the real cause of bud dropping. So are most of us, I presume, or we would take measures to prevent it. In my own case a fine tree of Alexander, which I always rely on to produce fruit in May for a special purpose, has gone altogether wrong this year, the bud dropping occurring to such an extent that I have only half a crop. In this individual case I am inclined to put it down to over-ripening of the wood, and shall take the precaution this year of shading the tree.

I am positive that many cases of bud dropping may be traced directly to want of water in late autumn and winter; and, again, the very early varieties, such as that mentioned above, when grown alongside later sorts for a succession, suffer from over-ripening of the wood. I have been so successful with these precocious kinds in cool houses that I was led to plant Alexander in an early house, and now I wish I had used Hale's Early in place of it. Early Grosse Mignonne is one of the most reliable Peaches in cultivation, but we need something to come in just before it, and Hale's Early, not being so addicted to bud dropping, fills the brief space, though not so early as Alexander.

And though I mention it almost in fear and trembling, the soda and potash insecticide now being used so freely on all hands is in some cases responsible for mischief in this direction. I have seen trees this season badly injured by its use, but I hasten to say that in my opinion the mixture was too strong. Peaches and Nectarines are more susceptible to injury from caustic applications than trees with a thicker bark, and when used, especially under glass, great care is necessary.

For dressing to be essential indeed shows that the culture of the trees has been neglected, for who with the facilities for fumigation, and the ease with which the trees will be kept in good condition, can excuse themselves for allowing them to get so overrun with insects that these remedies are needed?

And after this digression I must say I am entirely at one with your correspondent as to the injury being done before the trees are started, but I do not look for a specific cause. All errors of culture lead up to it, and a general healthy state of the trees is undoubtedly a preventive. Again, our system of disbudding and forcing the trees, to make few long shoots instead of a number of short ones, though needful, is a step in the wrong direction, but of this more anon.—H. R. RICHARDS, *Coldham Hall*.

A WORD FOR GODETIAS.

It is rather curious that we do not always appreciate the beauty of a family of plants fully until someone calls our attention to it. For years Godetias had been more or less under my notice, but only in a commonplace sort of way. It is true they had always been included in the seed order for annuals, and had been sown and grown as a matter of course; but beyond that they did not come in for any special share of attention. I have no doubt there are hundreds who grow this showy and useful annual on lines something similar. A packet of seeds is obtained and sown with the rest of the annuals, and in course of time the flowers appear. They are admired in a way with the rest of the garden's common flowers; and go again without having impressed the grower how really charming they are, and to the many uses they might be put.

Fortunately there are those who have appreciated the beauty of the Godetia, with the result that many pleasing varieties have been introduced. They have their champions too in the shape of growers as well as hybridisers, and in my notebook I find a jotting about Godetias, made last summer in the garden of a flower lover, who takes particular interest in these charming annuals. As the time is at hand when gardeners and amateurs are making plans and preparations for summer adornment, perhaps a few notes on the Godetia, when grown in variety, may not be unacceptable.

Though conversant with the plant in an everyday sense, I had never seen them present such a mass of bloom as in the garden referred to, and for the moment I was tempted to ask what they were. Closer observation, however, proved them to be the old-fashioned Godetias, but grown in separate varieties, by which method each particular colour and character could be noted. The first to attract notice was Lady Albemarle, and perhaps amongst the named sorts this is the best known. Its habit is rather dwarf, and its masses of crimson flowers are very attractive. Another form of the same variety may be obtained, called Lady Albemarle compacta, on account of its habit being closer and more compact. Another pleasing variety in the collection was Duchess of Albany, which grows pyramidal in form, and produces an abundance of soft white flowers. Godetia gloriosa appears to be the darkest flowered of the family. Its habit is close and compact, and its flowers a deep rich red. G. grandiflora rosea flore-pleno is a double-flowered variety, with blooms of a delicate pink shade. One of the most effective varieties in the garden was White Pearl. The flowers are satiny white, and the dwarf, sturdy habit of the plant makes it suitable for growing with other low-growing plants in beds. Another of

the same class, but dwarfier still, is Bijou, which also produces white flowers, and is of a very bushy habit.

The varieties named do not include all that are represented in the Godetia family, but they are sufficient to obtain an interesting collection of these showy flowers. Nothing is more effective in the summer than masses of showy annuals, and many a bare spot might be brightened by the outlay of a few pence and a little labour. Formal ways of furnishing beds and borders have few advocates nowadays, and greater value is, in consequence, set on plants of floriferous and free-growing habit. What more accommodating annual could be desired for the purpose than varieties of the well-known Godetia?—H. H.

NOTES ON ALPINE FLOWERS.

(Continued from page 221.)

CAMPANULA PLANIFLORA.

ALTHOUGH this pretty little Bellflower does not appear in the Kew “Hand-list of Herbaceous Plants,” it is, or at least was, grown in the Royal Gardens, as I recollect seeing a plant in bloom in the Alpine house there. Its garden name is more usually C. nitida, but planiflora is that approved of by botanists at the present time. As a rock-garden plant it stands in the front rank; although in some gardens it does not flower so satisfactorily as the grower would like. Why this is so is somewhat mysterious. Some writers tell us that it requires a stiff, rather strong soil, but, as the writer has amply proved, it flowers as freely as can be desired on a light one. The failure to flower must arise from some obscure cause.

There ought to be in cultivation four varieties of this Campanula. The one usually seen is the single white, but there are also single blue and double blue forms. There was, and it is likely that there is still, a double white form, but I have not seen it in any garden, nor can I find it in any catalogue. C. planiflora forms a pretty plant, with somewhat stiff and rigid habit. The long and rather narrow leaves are of a shining green, as if covered with varnish, and the flat, open flowers are produced several on a stiff stem about 6 inches high. The writer has not grown it from seed, but it is easily increased by division in spring or autumn. It was introduced from North America in 1731. It usually flowers about July. Maund's “Botanic Garden” gives an illustration, but it fails to do justice to this little plant. It ought to have a sunny place on the rockery.

SILENE MARITIMA FL.-PL.

In the same volume as that in which Campanula nitida is shown in Maund's work is a drawing of Silene maritima. One is rather surprised that the author did not figure the double form which is referred to in the letterpress that accompanies the plate. The single form of the Sea Catchfly is very plentiful on some of our coasts, and near where the present writer lives it grows in thousands. Under the name of S. alpina, practically the same plant, it is to be found on some of our British mountains. The double form is one of our best rock plants, and is generally a favourite when seen hanging over a ledge of rockwork with its glaucous leaves and its perfectly double flowers, which remind one of a double white Pink. The double Sea Catchfly is quite hardy, and is increased by means of cuttings taken in spring. It likes a soil which is rather poor, and a sunny position, where it will flower profusely from June onwards.

RIBES ALPINUM AUREUM.

By way of variety one can introduce with advantage a short reference to this little golden-leaved Ribes, which may sometimes be used profitably in rockwork of good size. Against a block of dark stone, or between two rocks of the same colour, the yellow leaves of the shrub contrast well, and it may thus relieve what would otherwise be a gloomy corner. It grows about 3 feet high, and has yellowish flowers, followed by insipid scarlet fruit, from whose want of flavour it receives the name of “Tasteless Mountain Currant.” The yellow-leaved variety under notice does not flower so freely as the type, but that is of little consequence, as its value depends upon the colour of its leaves. It may be grown in any soil.

PHUOPSIS STYLOSA.

Such is the now recognised name of a flower better known as Crucianella stylosa. It is one of those plants whose good and evil qualities may be said to be pretty equally balanced—if, indeed, we do not say that its defects are rather greater than its merits. The faults may be summed up as two. 1st, The peculiar odour it gives off after rain, or in the evening. (It is like that of some of the Acacias, but can be discerned for some distance off when the plant is wet). 2, The Phuopsis is of rather creeping habit, and is prone to spread a little too rapidly for the welfare of other and choicer plants. For the first of these faults there is no remedy; for the second a timely warning may lead to the plant being placed where it cannot do any harm.

Against these disadvantages Phuopsis stylosa has some good qualities. It is hardy, and easily grown in almost any soil; it flowers very freely for a long time; its flowers are pretty, and uncommon looking; and it looks well hanging over a stone. The blooms are arranged in a round head, each flower having projecting stamens, which add considerably to the beauty and character of the flowers. The blooms are pink, and there is also a brighter coloured variety, known as P. stylosa splendens. Phuopsis stylosa is readily raised from seed, but it increases so rapidly at the root that division is the method usually adopted. It comes from the Caucasus.—ALPINUS.

(To be continued.)

THE YOUNG GARDENERS' DOMAIN.

A WORD OF THANKS TO MR. THOMSON.

AS one of the oldest writers in the "Young Gardeners' Domain," I beg to heartily thank Mr. Thomson for his kind and encouraging remarks on page 202. I trust that many of my fellow gardeners will not be slow to turn his sound advice into practice. I have always considered that much can be learnt by the aid of "our Journal," and we who profit considerably thereby ought to consider it a great privilege to add our mite of experience in return for all we have received. I wish more new writers would avail themselves of these advantages, which are certainly for their own benefit. I hope that ere many weeks have passed Mr. Thomson will see results from his teaching, so that when he addresses us again he will be more than satisfied with the efforts to follow in the path he has so ably pointed out.—J. F. D., *Yorks.*

LIBONIAS.

THESE pretty greenhouse plants are not so extensively grown as they deserve to be. They flower during the dullest months of the year, and with their free and compact habit, should receive the admiration of all. They are valuable for conservatory embellishment, and the cheerful scarlet and yellow flowers of floribunda stand remarkably well in a cut state. *Libonia penrhosiensis* is quite as free flowering, and considered to surpass even floribunda. The colour is rich crimson red.

The cultural requirements of Libonias are simple. They succeed admirably in pits through the summer months if care is taken to keep them free from thrips and red spider, and a light shade is provided in the hottest weather. A substantial compost of rich fibrous loam, leaf mould, and mortar rubble, with a fair sprinkling of sand and sweet horse droppings, will be found suitable. No difficulty will be experienced in obtaining useful plants from cuttings rooted now. Never allow the plants to become root-bound in small pots, but keep them growing vigorously with copious supplies of manure water until they are set with flower buds. At this stage an intermediate temperature is necessary, or loss of foliage will ensue, which greatly detracts from the appearance of the plants.—F. W. G.

ONIONS.

THE Onion is grown more or less in every garden. The piece of ground chosen for the spring sowing should be well manured and deeply dug at the end of autumn so that the frost can get well into it. As regards sowing no hard and fast rule can be made—it has to be done according to the weather. Early in March is the best if the weather permits. Make the ground firm and level before sowing, and draw the rows about an inch in depth and a foot apart, as this will leave plenty of room for cleaning. After the seeds are sown cover them and again make firm.

When the seedlings appear above the surface and the rows can be distinctly seen it is a good plan to hoe between them to destroy any weeds that are coming up, and thin the Onions a little where they are very thick. As time goes on and the plants grow attend to the cleaning and thinning, about which I may say that when the final part is completed the Onions when fully developed should be touching each other in the rows, and, as it were, lifting each other out of the ground. About the middle of August the bulbs will be ripe and ready for lifting, and the store should be got in readiness to receive them. Choose a fine day for this operation, and when pulled up, if the weather is dry, let them remain outside for a few days with their roots fully exposed to the sun to give them a complete finish. Care must be taken in storing them, for if they are knocked about and bruised they will decay very quickly.

The time for autumn sowing should be about the middle of August, and every preparation must be made to receive them, carrying out the same instructions as stated for the spring sowing except for the early thinning. These may be left until they are larger, for they come in very useful for salads. I do not think it will be worth mentioning what varieties to sow, as there are at present so many to choose from, and different growers have their own individual favourites.—P. R.

DRAINAGE AND COMPOST.

By this time most of the inside borders and beds of fruit trees and other plants will have been renovated, and preparations are being made for the general potting that is carried on as time and weather permit. Before the season is too far advanced I should like to mention a few items respecting drainage and composts.

With regard to the former, it appears to me that not infrequently too many crocks are used, thus taking up space which the compost ought to fill, whereby the plants would have a deeper root run. Of course this would not apply to such plants as Orchids. It is not the quantity that insures a good drainage, but rather the manner in which they are placed in the pot. A perfectly flat piece is to be avoided for the bottom of the pot, as is one too much the reverse; the former is often the cause of plants becoming waterlogged, while the latter admits the too free passage of water and air. When potting plants that are in time again to be repotted, such as Palms, Pandanus, and *Imantophyllums*, which have thick fleshy roots, judgment must be exercised in regard to size of crocks used. Pieces that would pass through an inch mesh sieve, or thereabouts, are best, as these are easily extracted without mutilating the roots.

Occasionally one reads of carefully drained pots for Tomatoes, which consider is not essential, as the market men generally insert one large crock only, and then cover with the rougher parts of the composts. It

is the careful watering that one ought to study rather than too much drainage.

In speaking of composts, it is not my intention to dwell on those suitable for general purposes, but rather on those where peat is considered such an important article. Some of us, I fear, are apt to use peat too freely for the good of such plants as Ferns, Crotons, Coleus, and Achimenes. I have observed that when peat is used too freely the leaves are rarely so highly coloured or have so much substance as when turfy loam and leaf mould are employed in larger proportions; added to this they do not require such frequent watering, potting, and feeding. That these plants can be grown almost entirely in peat I do not attempt to deny, but in the end the results are not so satisfactory. In several instances I have seen that noble Fern *Adiantum Farleyense* fail to do, chiefly through using too much peat in the compost. Requiring abundance of heat and water as this Fern does, the peat soon becomes sour, and the roots fail to work actively, hence a miserable plant is the result.

Before I conclude, there is still one more article I should like to bring to notice—viz., sand. When we consider that sand is used principally for rendering the compost porous, we should also bear in mind that the more used the poorer the compost becomes, therefore it behoves us to look for something more substantial. This is readily found in charcoal. As a proof of this, the feeding roots of plants may often be seen clinging to charcoal when used in potting, as besides containing a certain amount of potash, it keeps the soil more porous and sweeter than sand.—PARVO.



FRUIT FORCING.

Cherry House.—If the trees are heavily laden with fruit, the demand for nutriment will be greater, as such trees will be less vigorous than those with few fruits, and whilst the former will be benefited by the application of liquid manure, the latter should have clear water as often as required, to maintain the soil in a thoroughly moist condition. Inside borders are more suitable for trees subjected to early forcing, as they afford a better temperature, more corresponding to that of the house or that in which the trees are growing, rendering the progress of the crop more certain and satisfactory, provided due regard be paid to the affording of needful supplies of water. Attend to ventilation and temperature, admitting air from 50°, and liberally at 65°. Syringe the trees twice a day, and keep the surface of the border damped. When the shoots have made four or five joints they should have the points taken out so as to form spurs; but those required for furnishing the trees ought to be tied in position early, and be carefully trained in their full length. Aphides must be kept under by repeated fumigation, as if they obtain a hold, they are not only difficult to exterminate, but spoil the appearance of the fruit.

Pines.—*Suckers or Plants Started Early in March.*—These will now require attention. The pots must be full of roots, but before the plants are root-bound shift them into 10, 11, or 12-inch pots, watering them a day or two previously, so as to have the soil moderately moist when they are potted. Take advantage of the removal of the plants to examine the beds, replenishing them if need be by the addition of fresh tan, mixing it with the old to a depth that will afford the temperature required—namely, 95° at the base of the pots until the roots reach the sides, when 90° is more suitable. Keep the air about such plants well charged with moisture during the time the house is closed, employing no more fire heat than is absolutely necessary to maintain a temperature of 70° to 75° on mild nights. Ventilate slightly at 80°, liberally at 90°, closing with sun heat at 85°, at which time syringe the plants. This treatment will be suitable for fruiting plants, except such as are in bloom, which should not be syringed. Examine the plants twice a week, and water those that require it.

Plants Started into Fruit Early in the Year.—These are fast approaching the flowering stage, and will be benefited by an occasional sprinkling at the time the house is closed, but when in flower they must not be so treated. The foliage being as yet tender, it will be desirable in the case of houses with large panes of glass to afford a slight shading for an hour or two in the hottest part of the day, until the foliage becomes inured to the sun's influence. When the flowering is over the fruit will advance rapidly if the roots are in good condition, and plentiful supplies of weak liquid manure will be requisite. Attend to ventilating early in the morning, commencing when the temperature is at 80°, and closing at 85° with sun heat. Keep the atmosphere moist when the house is closed and the bottom heat is steady at 80° to 90°, night temperature 70°, and 75° by day artificially. As the suckers appear remove all but one to each plant.

Vines.—*Early Houses.*—Where the Vines were started early in December the Grapes will be taking their last swelling, and if any of the bunches are too crowded remove a few of the least promising berries. The inside border must be duly supplied with water or liquid manure, and they must not be allowed to become dry after the Grapes are ripe,

as moisture is necessary for the perfecting of the crop. Choose a bright morning for the watering, and admit air rather freely, so that all superfluous moisture will disappear before ventilation is reduced for the day. A little sweetened manure may be spread on the border to stimulate the roots and prevent the soil cracking. Ventilate night and day when the berries begin colouring, and increase it as they approach ripeness, maintaining, however, a circulation of warm, rather dry air until the Grapes are thoroughly finished, when the temperature should be gradually reduced.

Vines in Flower.—Muscats and other shy-setting Grapes require a rather high temperature to set freely, the points of the bunches being kept well up to the light, and a free circulation of air with a fair supply of atmospheric moisture to prevent the young foliage suffering under the influence of bright sun. The temperature may be maintained at 70° by night, but with the Vines in good condition, free setting is effected with 65°, or even 60° at night, a little air being admitted constantly, and 70° to 75° by day, advancing to 85° or 90° from sun heat. When the Vines are in flower they should be lightly tapped on the stem each day after the houses have been ventilated an hour or two, or they may be brushed over lightly with the hand, which rids the flowers of their caps, sets the stamens free, and disperses the pollen on the stigmas. If there be no pollen visible as a yellowish dust when the bunches are brushed over with the hand, it should be taken from varieties that supply it abundantly, as Alicante and Black Hamburgh, and a large camel's-hair brush be filled with it, and the bunches brushed over after the hand has been drawn over them, refilling the brush with pollen as occasion requires, it being collected on a sheet of white paper turned up at the edges. Alnwick Seedling, Mrs. Pinee, Lady Downe's, and other varieties liable to produce small seedless berries should be carefully fertilised on fine days when the caps part readily from the flowers.

Late Houses.—Accelerate the growth of late Vines by making the most of solar heat, as all long-keeping Grapes cannot be over-ripened for keeping sound for some months after they are removed from the Vines, Lady Downe's ripened early in September being quite fresh in May and June. Ventilate early on fine mornings, as soon as the sun acts on the house, and allow the heat to rise to 80°, with increased ventilation and plenty of moisture, closing in time for it to rise to 85° or 90° from sun heat on fine afternoons. A temperature of 60° at night will be sufficient until the Grapes flower, when 5° more will be necessary to increase the length of the bunches and produce conditions favourable to the setting of the fruit. Gros Colman, Gros Guillaume, and Alicante set freely; but most other kinds of late Grapes require careful artificial impregnation, they being attended to as before advised.

THE KITCHEN GARDEN.

Asparagus.—Directly top growth commences, the time has arrived for forming new beds. Plants obtained from a distance will usually make good progress if properly managed. Asparagus succeeds best on a free working, sandy loamy soil, which will bear enriching without liability to becoming too rich and damp. On the heavier clayey soils, or those most retentive of moisture, the plants are liable to perish during the winter, especially if heavily dressed with stable manure. In the case of the sandy soils, double digging, mixing manure with both spits, adding the more decayed portions to the surface soil is all the preparation needed, and the Asparagus may be grown either on the level or only slightly above it. Greater attention to the drainage should be paid where the planting must be done on heavy soils. When planting, open wide deep drills 15 inches to 18 inches apart, according to the width of the beds, and in these form little mounds of good soil about 15 inches apart, allowing a greater distance if extra fine produce is desired. On these mounds set the plants with their roots spread out evenly, and cover with 3 inches of good, fine soil, or, in the case of lumpy soils, especially prepared compost. On no account dress newly formed beds with salt.

Beet.—Near the end of April is the best time to sow the seed of main crop varieties, especially where there is a tendency of the roots to become coarse. For early use the Turnip-rooted or Egyptian Beet is to be recommended, and this form is also the more profitable for sowing on shallow, hot soils. Seeds may be sown now either on a warm border or quite in the open, thinly in shallow drills 1 foot apart. Sparrows are fond of the young Beet leaves, and by way of protection dust over the seedlings directly they appear, and while yet damp, with soot and lime, repeating as often as necessary.

Borecole and Broccoli.—Those who have not raised plants under glass nor wintered any in seed beds in the open ought to sow seeds of Borecole, early Broccoli, Brussels Sprouts, Cauliflowers, and early Savoy as soon as possible on open borders. Much labour and vexation will probably be saved if the seed is sown thinly broadcast, covering it with sifted soil, or by sowing thinly, in drills drawn 4 inches apart. If raised thickly the plants have first to be pricked out in nursery beds, whereas those raised thinly may be moved direct to where they are to arrive at a serviceable condition. In all the more temperate districts the end of April or first week in May is early enough to sow seed of main crop and late Broccoli, late Cauliflower, Savoy, and Chou de Burghley. Brussels Sprouts, Borecole, and Sprouting Broccoli require the longest period of growth.

Cardoons.—These are not much grown nowadays, but if there is a demand for them they will not be found difficult to cultivate. Each row should be allowed a width of 4 feet. If the soil is comparatively light and non-retentive of moisture, prepare a trench as for Celery, and sow the seed thinly in a shallow drill drawn down the centre. On heavy soils the plants ought to be grown on the level, the site being well

manured and deeply dug. If the ground cannot be got into a free-working, finely divided state, raise the requisite number of plants under glass, and plant out. Fill 4-inch pots with light loamy soil, place three seeds in the centre of each pot, these germinating quickly in gentle heat. Reduce the seedlings to one in each pot, and before the soil becomes crowded with roots harden the plants, planting out 18 inches apart in the rows.

Carrots.—Young plants generally had a trying time of it during the third week in March, and what escaped the frosts were largely cleared off by birds and slugs. In most cases more seeds of the stump-rooted or Horn ought to have been sown soon after mild weather sets in, and advantage should be taken of a showery time to sow the main crop varieties in quantity. If this work is delayed a drying time may cause the coarser lumps of soil to harden and toughen so as to become unworkable. If the Carrot maggot is apt to be troublesome, dust dry wood ashes very lightly along the drills.

Parsnips.—Very large roots are not the best for the kitchen. Comparatively small roots, which may be cooked whole, are to be preferred. Early sowing and allowing much space is conducive to coarseness. If the seed is sown now on ground well manured for a preceding surface-rooting crop in drills not more than 15 inches apart, eventually thinning the plants to about 9 inches asunder, abundance of serviceable roots will result.

THE BEE-KEEPER.

QUEENLESSNESS.

It is important that stocks should always be headed by young fertile queens. There are, however, more colonies queenless during the early spring months than at any other season. This arises from a variety of causes, the chief one being old queens which are allowed to remain at the head of strong colonies after they have become decrepit and worn out. Directly, however, a queen's laying powers are retarded in any way the bees dwindle at a rapid rate, so that a stock that was probably the strongest and best in the apiary the previous season may in the following spring be one of the worst.

If a system of rearing young queens were adopted by bee-keepers who only keep a few stocks, and it is really a very interesting and simple business, losses from this source would be much less frequent. In large apiaries where the bee-keeper devotes much attention to his bees the practice of rearing young queens is almost universal, and if it pays where large interests are at stake, it is only reasonable to suppose it would do so in small apiaries.

It must not be assumed, however, that if young queens are raised annually the loss of stocks in the spring would be a thing of the past, as queens, to be of a strong robust constitution, should be reared during the height of the honey flow, and not, as is often the case, in the autumn. We cannot do better than imitate Nature in this respect. If bees are left to take their chance in ordinary seasons they will usually swarm a few weeks, more or less, according to the weather, before the honey flow is obtained from white Clover. Young queens thus naturally reared are as good as it is possible to obtain them.

This shows the advantage of working on similar lines, and rearing all queens, as far as it is possible, before the middle of July. Were this plan more generally adopted, and the stocks rationally treated afterwards, by seeing that each was crowded with bees, and after the honey flow was over feeding them artificially with sufficient stores to tide over the most severe winter until the following spring, losses from queenlessness in the spring would then be almost nil.

It is not advisable to handle the bees too much at this season to find out if the queen is safe, as with a little practice one can tell by observing the bees whilst at work whether they are queenless. If the bees are carrying in pollen freely, which they will now be doing in most districts, it is a sure sign that the queen is all right. If, on the other hand, the bees remain about the entrance to the hive in a languid manner, it is a certain sign that something is wrong with the queen. Robber bees from strong colonies are usually the first to find out a queenless stock.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- Barr & Sons, King Street, Covent Garden.—*Hardy Perennials.*
J. Cheal & Sons, Crawley.—*Dahlias and Other Plants.*
Cooper, Taber, & Co., Ltd., Southwark Street.—*Wholesale Agricultural Seed List.*
H. J. Jones, Lewisham.—*Chrysanthemum Guide, and Catalogue General Plants.*
W. A. Manda, South Orange, N.J.—*Seeds and Bulbs.*
J. Peed & Son, West Norwood.—*Plants.*
W. Sydenham, Tamworth.—*Roses, Pansies, and Violas.*
J. Weeks & Co., Ltd., King's Road, Chelsea.—*Boleuses.*



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Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Castor Oil Plant (*O. F.*).—Yes, the leaf is one from a variety of the species *Ricinus communis*. It is best to sow the seed singly in small pots, and place in heat early in March. Young plants should then be kept growing under glass until early in June, when they may be hardened and put into their permanent positions outside, or used for decorative purposes indoors when sufficiently advanced in growth. The leaves are falling from the present plant in the room because it is too cold and unfavourable for its growth.

Bare Cotoneasters (*Idem*).—The Cotoneasters may be cut down to any extent, or as near the ground as you desire fresh growth to issue from and form compact bushes. The earlier this is done the better, so as to secure well ripened growth this season. Privet bushes are amongst the most tractable of shrubs for cutting, hence selected and much used for divisional hedges. Now is the best time to operate on straggling plants so as to secure compact specimens, shortening irregularities about July.

Sheep Manure for Liquid (*N. B.*).—The sheep manure you have in a barrel is good for Rhubarb or anything requiring nourishment, and is richer than that of cows. A peck is sufficient for 30 gallons of water, and it is advisable to use the clear liquid only for plants in pots; but for Rhubarb the thick may be employed—not, of course, over the stalks or leaves. It is perhaps the best of all liquid manures, but is improved by the addition of a little superphosphate of lime, say $\frac{1}{2}$ oz. to a gallon of water or liquid.

Kainit for Parsley (*Idem*).—This is a good fertiliser for Parsley, being useful also against "canker," as caused by a small grub, *Psila rosæ*. It is best used before sowing the seed, applying about 2 ozs. per square yard. If used now keep it from the hearts of the plants, sprinkling it between the roots or about the plants, not using more than the quantity stated. The rain will wash it in fast enough, or it will soon disappear if the ground be moist, when only it must be applied in the "dry" state. If applied in liquid form use 1 oz. to a gallon of water, and keep this also from the hearts of the plants. You can apply a gallon per square yard, and repeat in the course of about three weeks.

Vines Unsatisfactory (*Mid-Sussex*).—The roots are quite free from phylloxera or any animal or vegetable pest, but the small fibres are dead, though they have been abundant. The shoots, evidently Muscat of Alexandria, are very pale in colour, otherwise healthy and fruitful. One shoot, probably a Black Hamburgh, is also very yellow, yet fruitful and healthy. Of course these are in marked contrast to the other shoot. This is very green and promising, though why it should be so and the others deficient in colour and vigour does not appear, except from varying degrees of constitutional vigour in the respective Vines. The soil appears of a generous nature and well suited for Vines, and as the drainage is good we do not see any reason to be alarmed, for the Vines in the early house would suffer most from the lifting, being brought forward too quickly, as compared with the later varieties in the late house. The soil appears deficient of lime and even of gritty matter. The latter cannot be altered without remaking the border, but you may add the lime with advantage. We should give without delay a dressing of best air-slaked chalk lime and soot in equal parts by measure, using $\frac{1}{2}$ lb. of the mixture

per square yard, and point in very lightly with a fork, or cover, after scratching in, with a little short sweetened stable manure, watering in due course, but avoiding a saturated and sodden condition of the soil. Then, for top-dressing, supply 4 ozs. per square yard of the following mixture:—Bone superphosphate, dry and crumbling, five parts; double sulphate of potash and magnesia, three parts; sulphate of iron, one part; and sulphate of lime three parts. This should be washed in, first moistening the border in the ordinary way, giving the top-dressing, and then washing in moderately. Apply this about three weeks after using the lime and soot.

Coke for Heating (*C. H.*).—The coke made at "pits" in coke ovens is better than that made at gasworks, and also much dearer, hence very little, if indeed any, pit coke is used for horticultural boilers. That from gasworks answers quite well.

Shoots from a Young Vine (*Idem*).—You ask, "If a young Vine when planted is cut back to six or seven buds, should all the growth be rubbed off when they break except the one intended for the rod, or be stopped at four or five joints to help root action, and then be pruned off altogether next pruning time, as they would be opposite the brickwork lower than the trellis commences?" This is a sensible question, and indicates a desire for attaining unto best practice. According to theory, the more growth the more roots; but this does not hold in practice except under an identity of circumstances, the roots being fewer, though larger, in rich than in a relatively poor, but not sterile, soil. Besides, plants differ in pushing fresh rootlets. Some, as Currants, emit roots with or in advance of the swelling buds; and others, as Vines, seldom push roots before the leaves. In the former case growth would be accelerated by root formation, and in the latter the young shoots would draw upon the stored matter, and thus take from the vigour of the leading growth. We have tried both plans and have found it the better practice to allow all the buds to start, and when the leading growth has got leaves partly developed gradually remove the other shoots. The leader then gets all the vigour of the Vine, first pinching them to a few leaves to thicken the stem.

Drooping Disease in Cucumber Plants (*Market Grower*).—The plant submitted is affected by the fungus that produces the well known "rust" in the root stems of seedling French Beans, and also in those of Cucumbers, Melons, Vegetable Marrows, and other cucurbitaceous plants. It also affects the leaves, producing yellow spots, and they die off one here, another there, some at the base of the plant, others at the top, and some at the points between those extremes. It is found on the fruit as "rind spot," and seed sown from such fruit are affected in the embryo—that is, the disease plasma goes over inside the integument of the seed. In the "rust" stage, present on the root stem, it kills or greatly impairs the young plant, few growers potting off such plants, as they have deformed cotyledons or first leaves, a rusty root stem, and a killed radicle; but the plant often pushes roots laterally from the stem above ground, and lives on for a time, or even to the perfecting of fruit or seed, the leaves here and there collapsing suddenly and dying back to the base of the midribs, or even to that of the petiole. The plant may be somewhat improved by earthing up the stem, for the young roots die at the tips or so-called spongioles, and the root hairs, of course, perish. Sometimes "sleepy" disease fungus then intervenes, the root stem turns brown, and eelworms take possession. There exists no swelling, but a dry gangrene, and no browning of the spiral vessels, as obtained in "sleepy" disease above the ground. Where the latter disease occurs, the browning is very decisive between the bark and woody part of the stem where the hyphæ of the fungus traverse. In the main part of the specimen examined there was no root stem "rust," no "sleepy" disease fungus, and no eelworms, but the chief root system was perfectly sound, quite white and healthy, albeit all the root tips and a considerable part of the fibrolets, with their root hairs, were quite brown and dead. In the small dead roots were mycelial hyphæ according with that of *Fusarium solani*, and also the earlier stage of the "sleepy" disease fungus (*Hypomyces solani*)—namely, *Diplocladium solani*. The final or resting stage was not found, nor were any eelworms, but every particle of soil had been removed, and the eelworms, if any were present, may have departed. The "leaf spot" has only a yellowish appearance, not a dark coloured patch, surrounded by a reddish line, as in the case of French Bean leaves, and in the tissues exist extremely minute mycelial hyphæ, this running in the tissue causing the yellowish appearance, as it abstracts the nutrient matter, and "eats up" the chlorophyll. Here, and there appear very pale coloured patches of bodies, closely packed, and under the microscope are seen as slender threads, each bearing a minute spire at its tip, which is the plant known to botanists as *Glœosporium Lindemuthianum* syn. *Colletotrichum lagenarium*. Preventives:—(1) As it is perfectly well known that diseased seed produce diseased plants, and, furthermore, that the seed shows so little external signs of the disease as not to be suspected, it is very important that seed obtained from a district where the disease has recently existed should not be sown. The diseased seeds, however, are usually pitted and blistered. (2) Never pot a seedling that has a brown radicle, and shows the least trace of "rust" in the stem, or is affected with pale blotches in the seed leaves. (3) Remove the diseased plants the moment the fungus is observed, then the disease will disappear, at least for that season. The so-called remedies are really only preventives, such as using a little sulphur on the hot-water pipes, the fumes of which are fatal to the fungus. We have found, however, that the maintaining of a relative high temperature—that is, 65° to 70° at night, 70° to 75° by day on dull days, with the 10° to 20° rise on fine days, with air from 80°, and never having an atmosphere-surcharged with moisture, answers equally well.

The Narcissus (Inquirer).—By far the finest work is Burbidge's, "The Narcissus, its History and Culture," which includes also a scientific review of the genus by Mr. Baker, of Kew. It was published by Lovell Reeve, & Co., London, in 1875, and a secondhand copy may, perhaps, be obtained for about 20s. It contains forty-eight coloured plates. Try to procure it through a local bookseller. "Ye Narcissus or Daffodil," subsequently produced by Messrs. Barr & Sons, 12, King Street, Covent Garden (1s.), is also worth having. We do not remember any later works, but modern varieties are described in catalogues.

Tubular Boilers (E. D.).—Tubular boilers are probably the quickest in heating of all the varied forms, because so much of the water is brought in immediate contact with the fire. The illustrated sheet you send contains both forms—upright and saddle tubular as manufactured by Messrs. J. Weeks & Co. We know of an upright tubular that has been used for more than forty years, and it does its work as well as ever. The saddle tubular of the firm is, we think, comparatively new, and we have had no actual experience with it, but judging by the illustration, which shows its character clearly, we have not the slightest doubt it is a quick, powerful, and efficient boiler. The work of the best of boilers may, however, be frustrated or seriously impeded by the defective arrangements of connected pipes.

Pelargoniums from Eyes (Bradford).—Take the cuttings from the plant, cut transversely below the lowest leaf, and then, placing the knife about half an inch above the eye, cut the stalk in a sloping direction towards the base of the shoot. The large leaves only are available for forming leaf cuttings. The extremities of the shoots should be inserted, like ordinary cuttings, with one joint in the soil, and the growing point above. The cuttings being made as described, drain the cutting pots effectually, and fill them to within half an inch of the rim with sandy loam, leaf mould, and silver sand in equal parts. A little silver sand is then placed in the pot, a quarter of an inch or so, and the cuttings inserted about half an inch deep, each leaf being tied to a small stick, with matting round the footstalk, to maintain it in an erect position. A slight watering is then given, and the pots plunged in a bottom heat of 75°, a top heat of 60° or 70° being afforded. The frame having a moist atmosphere, there is little necessity to water; none should be given so long as the soil remains moist, and the less water needed the better, as the great evil is the liability of the footstalk of the leaf to decay, and the consequent destruction of the eye before a callus is formed. Shade is given for a few days, until the leaves are able to bear the sun; and in this position they remain until the shoot from the eye appears, when they are gradually hardened, and finally potted singly in small pots.

Tuberous Rooted Begonias (W. Raby).—The old tubers should be kept steadily growing till wanted for the flower beds. They ought never to be subjected to much heat, or see the inside of small flower pots. Start them either in a frame over a nearly exhausted hotbed, or in boxes and deep pans in a warm pit, newly started vinery or Peach house. Use a fairly rich compost, and be careful not to over-water and sour this at the outset. They may be placed rather thickly together, and be given more room when growing strongly, or be kept well apart from the first, and all can then be eventually transplanted to the beds with a good ball of soil and roots attached. When the young shoots are about 1 inch in length the tubers may be safely split up into as many pieces as there are well-divided shoots. Surround these divisions with sharp sand and a light loamy compost, place in gentle heat, and water sparingly at first. All will soon develop into strong plants, and do well for the centre of beds, this year's seedlings it need be occupying the front rows. The latter should also be kept out of pots, as they rarely move well from these. When they are getting too large for the pans in which they are thickly pricked out shift them into other pans or boxes, and from these to a bed of soil over a mild hotbed. Gentle rather than a strong dry heat best suits seedlings as well as old plants; shade from bright sunshine must be afforded.

Stopping Vines (Nemo).—When the growths have advanced one or two joints beyond the show for fruit, and there is space, stop so as to apportion the leafage for due exposure. Where there is space it is better to allow shoots with fruit to extend three or four leaves beyond the bunches before taking out their points, then there must be space for lateral growth, it being preferable to allow the laterals to make two or three leaves before stopping, afterwards pinching as space permits. This applies to growths above or level with the bunch, the object being to secure abundant supplies of nutriment to the clusters. The laterals from the leaves below the bunches may be pinched to one first joint and to one leaf afterwards as growth is made. This secures good results in the current season without prejudice to the prospect for another year. Where the space, on the other hand, is limited, it not being possible to carry out the process without crowding, the bearing shoots may be stopped when the leaf at the point determined on is the size of a halfpenny, one or two joints being allowed beyond the bunch. The lateral, level with or above the fruit, must be pinched to one leaf as growth is made, and those below the bunch can be dealt with in a similar manner. This will secure plump basal buds and admit of close pruning, while the principal leaves have full exposure to light, and there is some amount of lateral growth for sustaining root activity and a fair amount of nourishment and stored matter for ancing contingencies.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best

condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. L.).—1, *Euonymus latifolius variegatus*; 2, *Veronica Andersoniana variegata*; 3, *Iresine Herbsti*; 4, *Zebrina pendula* (*Tradescantia zebrina*); 5, *Cydonia (Pyrus) japonica*. (J. T.).—*Billbergia nutans*. (R. A.).—1, *Platynerium alciorne*; 2, *Seiaginella Wildenovi*; 3, *Odontoglossum luteo-purpureum*. (H. P.).—1, *Ailium neapolitanum*; 2, *Deutzia crenata flore pleno*; 3, *Dendrobium nobile*, good dark form; 4, *Cypripedium barbatum*; 5, *Odontoglossum Sanderianum*. (G. C. T.).—1, *Dendrobium nobile*; 2, *D. Wardianum*; 3, *Odontoglossum crispum*. (A. J. M.).—1, *Daphne Mezereum*; 2, *Acacia cordata*; 3, *Rhododendron fragrantissimum*; 4, *Acacia Drummondii*. (B. H. W.).—1, *Polypodium pedatum*; 2, *Nephrolepis exaltata*; 3, *Cyrtomium falcatum*; 4, *Pteris umbrosa*; 5, *Asplenium bulbiferum*; 6, *Davallia Moorei*.

COVENT GARDEN MARKET.—APRIL 5TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzenera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 0 10
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz.		
Bouvardias, bunch ...	0 4	0 6	bnchs. ...	6 0	8 0
Carnations, 12 blooms ...	2 0	3 0	Narcissus, doz. bnchs. ...	1 0	2 0
Daffodils, single yellow, beh. 12 blooms ...	0 6	0 8	Orchids, var., doz. blooms	1 6	9 0
Daffodils, double, bunches	0 4	0 6	Pelargoniums, doz. bnchs.	6 0	10 0
Eucharis, doz. ...	2 0	3 0	Roses (indoor), doz. ...	2 0	3 0
Freesia, doz. bnchs. ...	2 0	4 0	„ Red, doz. ...	4 0	6 0
Gardenias, doz. ...	4 0	6 0	„ Tea, white, doz. ...	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Yellow, doz. (Perles)	2 0	3 0
Hyacinths, Roman, bunch	0 6	0 8	„ Safrano, doz. ...	2 0	2 6
Lilium Harrisii, 12 blooms	6 0	8 0	Smilax, bunch ...	2 0	3 0
„ longiflorum, 12 blooms	6 0	8 0	Tulips, bunch ...	0 6	0 8
Lilac, bunch ...	3 0	4 0	Violets doz. bunches ...	0 6	1 6
			„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	8 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



CONDENSED MILK.

It is all very well to prepare a Bill—to take infinite pains with every section and clause, to study the pros and cons, to make the thing so pat, and even so that it may injure the interests of no one. All this, we say, is comparatively easy—the initial step in fact. The tug of war comes when the Bill has taken shape and is presented before Parliament and the general public. Then opposition becomes rife.

The unfortunate Minister who has the Bill in hand wishes he had never seen the light, and is ready to consign his numerous advisers body and soul to oblivion. We can sympathise with the man in the minister. It is so hard and so cruel to have a pet scheme, and possibly a most excellent one, exposed to wise and unwise criticism, and to hear and listen to every man, or body of men, who think they are in the "know," and that their advice is priceless.

Very few Bills meet all the needs of the case; at least, so the public seem to think. Measures are, as a rule, not drastic enough. There is a sort of feeling that a bill should go to the root of the matter. People are apt to forget that no really great measure was hurriedly brought about. All great things are of slow growth, and, therefore, more lasting when they have attained that growth. There are measures of a preparatory nature as well as of a final nature.

We prophesied last week that Mr. Long's position at present could not be defined as a very comfortable one. He, as Minister of Agriculture, has brought before the House an excellent Bill for the prevention of food adulteration. Excellent so far as it goes, but now the dogs of war are let loose, and he will be enjoying a very *mauvaise quarte d'heur*.

The first subject for attack is Clause XI., which reads thus:—"Every tin or other receptacle containing condensed, separated, or skimmed milk, must bear a label on which the words separated or skimmed milk, as the case may require, are printed in large and legible type," and so on, *re* penalties.

Now this does not quite meet the doctors' view of the urgency of the case. They think the regulations, and possibly the punishment awarded to breach of the regulation, not stringent enough. And their arguments have some weight. We look upon doctors as disease curers. We ought to take a wider view, and look upon them as disease preventors. That is far the nobler calling. It means so much pain, so much death averted, so much more ease and comfort for the whole human race.

We have often urged the necessity for a milk diet for the young and for the invalid; but when we said milk diet, we meant the pure unadulterated fluid. In crowded streets and alleys the milkcart is not so frequent a visitor as it should be. The pennies for fresh milk are not always to be found; and if found, there is great difficulty in finding a suitable place where the precious milk may be kept sweet and wholesome. This difficulty is not an exaggerated one. Try yourself, kind reader, to keep milk sweet in one room, which has to serve as parlour, dining and bedroom for a family, and then you can enter into the difficulties of an East-end mother. There are babies everywhere, and alas! invalids too; and a great trade is done in tins of condensed milk—small portions easily consumed, and fitted for small purses.

Now, condensed milk as first made was a most excellent substitute for the genuine article—easy of transport, digestible, and wholesome. It contained all the valuable properties, with the addition of a little sugar. But the manufacturers ate of the tree of knowledge, and for fresh milk substituted separated or skimmed milk, and were able thus to give the consumer a benefit in the matter of price at the expense of quality. The ignorant mother or nurse delighted in the cheaper article, little guessing the serious harm done to her charges by feeding them with a substance from which the most valuable part was extracted.

We have heard it argued that skim milk is fine food for the baby, but the doctors do not agree to that axiom. They are claiming that the ignorant public must be protected from itself; they urge that all this weakened milk (we use that word for want of a better) should be classed as "casine," and for distinction's sake be marked with a large K, and that on the label should be clearly printed, "unsuitable for infants and invalids." We are every now and again shocked by statistics regarding infant mortality in great towns, and although the atmospheric surroundings leave much to be desired, it is really the inadequate feeding that is at the bottom of the mischief. A child is the father of the man, and it behoves those in charge of the child to see that it has a fair chance to become a healthy member of society.

One doctor gives in his evidence a rather startling fact *re* this cheap condensed milk. "Practically 40 per cent. of the children who died in his district last summer died from the effect of taking condensed milk." It is worse than useless, as it blocks the way against wholesome nourishing food. If children are thus killed off in this wholesale manner, what of those who do not actually succumb? Another doctor, speaking most emphatically, declares this food (?) to be most productive of rickets and a debilitated constitution. How are people to be taught to take care of themselves? It is only by constantly hammering away at the same old subject. Something has to be done, something made or invented and presented to the public in an attractive and cheap form.

Margarine for butter, we presume, does not really hurt the consumer; he hates to be robbed if he knows it; but here the most helpless portion of the population is daily robbed, not of a dainty or luxury, but of that very part of their food which is calculated to preserve them in health and bring them to maturity. The chemist and the farmer must combine a pure food, easily kept and easily purchased.

WORK ON THE HOME FARM.

Thousand-headed Kale may be sown now for September use in succession to early Cabbage. The treatment is very similar to that required for Swedes, except that the date of sowing is so much earlier. Sow 3 lbs. per acre, and thin them with a narrow hoe when large enough.

Wheats have suffered from the cold weather and show further signs of weakness. The thin crops may revive without assistance, but the very full over-thick pieces may need a little help if they are to keep up the proper rate of progress and produce a good ear. One cwt. of nitrate of soda per acre may mean the difference between a full crop and half of one, but if nitrate is to be applied for Wheat it must be put on in April, so that the nitrogen may be utilised by the plant before the ears make their appearance.

Potatoes are being planted very favourably, the frost has pulverised the ridges, and the mould is splendid; 2 cwt. of sulphate of ammonia and 3 cwt. superphosphate should be a good dressing for 1 acre, and help the plants to make a good start. Up-to-Dates are all the rage this season, as we suppose British Queen will be next year, and something else in 1901. We think some of the older varieties still worth growing. Bruce and Maincrop are good average croppers, and the latter still unrivalled for quality and price-fetching. Lambs are doing well, but have to do with a very casual look at the new pastures for fear of adding to the frost damage.

Cattle should be out, but there is nothing to turn them out to. They will, however, be better out if only for a few hours every day; they will pick a little grass and be getting hardened, whilst the exercise will give zest to their appetites and keep them healthy. When turned out for good, cake should be continued for a short time, and gradually diminished as pastures improve.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. March and April.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	incha	
Sunday 26	30.038	48.9	45.1	W.	36.4	55.1	36.8	79.8	33.0	—	
Monday 27	29.993	47.2	42.6	S.W.	38.6	57.1	38.2	79.7	30.9	0.011	
Tuesday 28	30.043	49.9	47.3	S.W.	40.0	56.6	41.7	85.4	36.1	0.031	
Wednesday 29	29.902	54.6	48.2	W.	42.1	61.1	49.6	104.9	43.1	—	
Thursday .. 30	30.240	49.7	47.0	S.W.	43.2	60.2	45.1	106.7	39.9	0.132	
Friday 31	30.189	45.2	45.0	S.	44.0	60.6	43.1	84.0	42.0	0.010	
Saturday.... 1	30.141	52.2	49.9	W.	45.2	65.6	45.2	92.7	44.9	—	
	30.078	49.7	46.4		41.4	59.5	42.8	90.5	38.6	0.184	

REMARKS.

26th.—Rain till 4 A.M.; bright sun all day, halo in afternoon.
27th.—Faint sun at times in morning; slight showers in afternoon.
28th.—Overcast generally, but occasional sun in morning; rain in evening.
29th.—S.W. gale and bright sunshine in morning; cloudy at times afternoon.
30th.—Overcast morning; sunny afternoon.
31st.—Rain from 4 A.M. to 9 A.M., then generally overcast, but gleams of sun at midday.
1st.—Fair, but almost sunless; spots of rain at noon and 5 P.M.
Temperature nearly 20° higher than in the previous week; a very remarkable rise, sharper than has occurred for at least fourteen years. Rain still deficient.—G. J. SYMONS.

BARR'S PURE GRASS SEEDS

For Lawns, Tennis Courts & Cricket Grounds.

The following mixtures are composed of **PURE GRASS SEEDS** only, which have been thoroughly cleaned and carefully mixed. They cannot fail to give the most satisfactory results.

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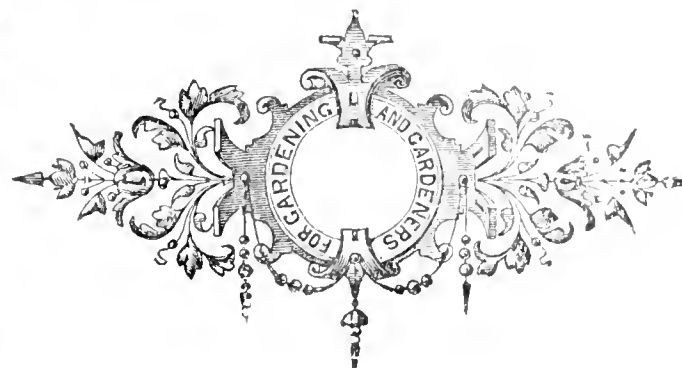
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THURSDAY, APRIL 13, 1899.

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WORKING AND WINNING.

AN AUTOBIOGRAPHICAL SKETCH.

NOTHING gives us greater satisfaction than seeing gardeners who by their ability, judgment, and persevering industry have won for themselves positions in life much better than those which fall to the lot of so many, worthy though not a few of these may be. We are glad to know of several gardeners who have in different but strictly honourable ways made gratifying progress in life, and can spend, so long as health remains to them, a happy eventide, and with means to obtain all that can be reasonably wanted to the end. How many there are who look forward longingly for such a most desirable result of their career of labour! but, unfortunately, how comparatively few out of the great multitude obtain the object of their hopes!

In the very nature of things it is not to be expected that more than a moiety of gardeners can reach the goal of independency before their strength for work is spent; but the examples of those who have accomplished the great object show the possibility. Whether the moiety who succeed be increased or not depends, to a greater extent than many men realise, on themselves; and at any rate a near approach to the ideal is something well worth striving for by the head and the hands, or, in other words, by the best of work, and the exercise of that valuable quality known as "tact," which may be explained as the most appropriate adaptation of bearing, act, and speech to the circumstances of the moment. Ability and tact are not always combined in the same person, but when they are, *plus* industry, the possessor has a decided advantage over his fellow men, who are lacking in either, in the struggle for supremacy.

There are gardeners, or men known as such, who will not accept the above statements. They may be intellectually incapable of thinking the matter out for themselves (in which case are not fit to be gardeners), and take the easy cut of regarding all successful men as "pampered pets of patronage," and whose only stock in trade is "luck;" but after making allowance for what are called "strokes of

luck" on the one hand and misfortune on the other, the fact remains that those who commence "lounging" for the hoped-for reward soon enough, and who strive as earnestly, perseveringly, and thoughtfully as they "long" for the means of support in the latter days, are much more likely to accomplish the laudable desire than are those who give little thought to the important matter, and who trust to "luck," or that fickle jade "fortune," to carry them through. Some men have been naturally more fortunate than others in obtaining some coveted position, but a proportion of these have made mistakes and failed, while others, by their unquestioned ability and more discreet methods, have increased their reputations and firmly established themselves in the positions that they so worthily fill, or from which they have retired, with so much credit to themselves, to their well won rest.

With very few exceptions these worthies have not won their honours by any mere freaks of fortune but by very real work. They have gone through the drudgery of gardening, and most of them also through another kind of drudgery—self-education—becoming men of considerable and varied mental acquirements, while not ignoring the courtesies or even some of the accomplishments of life; yet never forgetting, nor wishing to forget, they are gardeners. They have struggled through many a hard task and overcome many a difficulty; they have not been tempted by the frivolities of life from the path of duty; have thought seriously over every change from place to place; have made few mistakes or missed few opportunities; and thus by learning, by working, and by waiting, their time and turn have come, and then, being well equipped for various duties, have won success.

These remarks, which are penned mainly in the interests of the men of the future, have been called forth by the perusal of a letter of an unusual nature from a gardener, who by indomitable work of all imaginable kinds in the garden and much out of it, has made his fame and fortune in the prime of life. Here follows the letter, the character of which we have ventured to condense in the heading of this little introduction.

My gardening career at Wimbledon House has been for some time at an end. We left there last autumn, October 20th, after twenty-four years' service, to make room for the place, grounds, and gardens, to be cut up by the building community. By the death of the late Sir Henry W. Peek, Bart., I lost a good master and sincere friend. For years, I can truthfully say, he was a daily companion, always spending any spare time he could with me in walking about his estates, either in Surrey or Devon. When we were separate it was very rare that I passed a day without writing him to post him up in my doings. This I made a golden rule, and it was seldom that a day passed without receiving a letter from him, and I felt his loss the more keenly because of our close association. The inevitable end, however, came, and, as I have said, the estate is being broken up for building purposes, I shall have more time to devote to brick-making, and a few millions of bricks will be wanted.

Although I found plenty to do when I entered on my charge at Wimbledon House, I was soon afterwards further entrusted with the duties of supervising the laying out and planting of Sir Henry's Rousdon estate in Devon, from plans supplied by the late Mr. Robert Marnock. This led to my taking the entire management of the estate, including the direction of tradesmen and employes, and necessitating a journey to Devonshire every ten days or so, and spending half my time there. The management of the two estates—one at Wimbledon, the other close to the Atlantic—was no small undertaking; still, looking ahead to eventualities, I extended my labours by developing a brick-making business on my own account. From an output of 300,000 bricks a few years ago the work steadily advanced to an output of 2½ millions a year, a result not to be despised in these days of strong competition.

During this private work, fully known to Sir Henry Peek, the men and boys in his employment, for whom I have been responsible for and had the direction of, have often exceeded over 100 on the two estates, 150 miles apart. This has been done without any assistance, not even an office boy. The ordering of everything, and the payments for everything, were issued by my hands, after approval by Sir Henry, so that for some years I was heavily taxed, and as I have not had forty-eight consecutive hours to myself on my own account for over twenty years, except on one occasion when I attended a funeral, I think I am now entitled to a little rest, which I hope to enjoy.

I have not sent you any gardening matter for some time, as I felt

I should be inviting people to come and see the nakedness of the land at Wimbledon, as after Sir Henry went away five years ago the house was "shut up," and the grounds have naturally been very rough. It was then that I gave up the Devonshire portion of work, promising to remain at the "old place" with a small staff of men until it was sold. The gardens were extolled by Loudon in the "Suburban Gardener." Sir Henry spent over £30,000 in the rebuilding of glass houses, lodges, offices, and remodelling various portions of the grounds thirty-one years ago. They were long the pride of the neighbourhood, but now being blotted out, and will soon be a thing of the past.

Although the late Sir Henry Peek was a very rich man and exceedingly charitable, few equalling him in that respect, he was nevertheless very precise, and what some might call "exacting." One of the greatest rebukes I ever experienced was one evening on returning from Rousdon to Wimbledon he gave me three-halfpence to get him a "St. James' Gazette" and an "Echo." Arriving at Basingstoke I bought the "St. James'," but no "Echo" was obtainable at any station. On arriving home we retired to his room to do a little business. On bidding him good night he remarked, "But you did not give me my halfpenny." If I had forgotten it for a moment he had not, and on handing it to him he said "it will be very useful to-morrow."

On another occasion he told me he sent one of his clerks to the post-office with a telegram for which they charged one halfpenny too much, as they had counted a compound word as two single words; he instantly sent the clerk back to fetch the halfpenny, as they had no right to charge it. This he did on principle, regardless of the value of the clerk's time going to and fro. I have often thought if the public in general, and gardeners in particular, were, as some are, equally careful and exact in small matters, that an enormous amount of poverty would be prevented and charitable institutions relieved of the pressure of so many would-be pensioners.—J. OLLERHEAD, *the Gardener Brickmaker*.

It will be observed that Mr. Ollerhead does not sink the title of "gardener," to which he has so good a claim; nor is too proud to acknowledge the occupation, which we rather suspect has brought him some wealth; but if he had not been careful in small matters, after the manner of his late and rich employer, he could not have purchased the land and material for raising and distributing 2,500,000 bricks, which he foresaw would be wanted in the architectural transformation of the gardens and ornamental grounds of Wimbledon House.

Though some people, unacquainted with the abysmal depth of the ignorance of editors, appear to think that these hard-working officials know everything, we really do not know the Ollerheadian profit on "a thousand of bricks;" but if they are the same as that of another manufacturer, the 2½ millions alluded to would bring in a very respectable income. The portrait of our "gardener brickmaker" may be seen on the opposite page.

OLD-FASHIONED BEDDING PLANTS.

THREE decades back should, one ventures to think, entitle those plants then in common use for bedding purposes to be termed old-fashioned, for they are, as a rule, so much out of date as to warrant the designation. And, still another reason, there was a certain careless grace and freedom characterising the then new fashion which has long since been improved (?) away. Had it been otherwise, probably, the recent sweeping condemnation of all sorts and conditions of bedding would not have arisen, and what was really a charming feature in the long-ago would be more than tolerated amongst our "up to date" conceits of to-day.

It is only during recent years that we reached the height of fashion in this direction; and the height of fashion is often the height of folly, from which the descent is made with fatal rapidity. One cannot but think so in noting how, in some large gardening establishments, summer bedding has been utterly abolished in favour of perennial hardy plants. There is much to be said for the latter phase, and nothing against it; but should there not be a place in our hearts, and a corner in our gardens, for the old-fashioned bedding plants—that is, as they were ere they were pinched and punished, dwarfed and prostituted into billiard-table levelness?

Thirty years ago the list of tender bedding plants was a limited one. Beds or borders devoted to them were often only sparsely filled. They had not then robbed for half a year the rightful occupants of the houses of their birthright, even then, to some extent, being regarded as usurpers, and treated as supernumeraries; nor did they occupy so long a period under glass. In the South of England, with the advent of May, planting out began, and was generally completed ere the

process now is commenced. The old-time bedders were afforded room to grow, and—they grew. They were, too, I believe, hardier, as well as more vigorous in constitution, than their degenerate descendants. For instance, the old variegated *Pelargonium*, Flower of the Day, which was superseded by Flower of Spring, a form infinitely superior, it is admitted, was inferior to it in hardy qualities. Some eighteen or twenty years since a severe frost was experienced early in June, which cut some large beds of Flower of Spring to the ground. Among these had, inadvertently, been planted some of the old Flower of the Day, and these escaped. Its only merit now is to point a moral, but other things there are for which an early love has made the memories long and lasting.

Of *Lobelias* thirty years ago there was a variety called *Paxtoniana*, and another, I think, *Crystal Palace Gem*; and what charming edgings they made in their rambling propensities. And how rarely seen nowadays is the beautiful old *Calceolaria amplexicaulis*. Among the *Pelargoniums*, *Stella* and *Cybister*, grand representatives of the *Nosegay* type, have never been surpassed for tones of colour and floriferousness; but they were given to rambling, and had to go altogether when the neater habited fiery *Vesuvius* came on the scene. If it is still possible to procure the old *Stella*, and I doubt it, I would strongly advise anyone, with a lingering regard for old-fashioned bedding, to reinstate it in a bed or two which have the harmonious framework of a good expanse of lawn; moreover, to employ it without any edging, and to let it grow comparatively unrestricted.

I have never seen a prettier or more pleasing bed than one formed of the old *Pelargonium Manglesi* and *Verbena venosa* planted promiscuously through it. For some years this was a feature in an old-fashioned garden, the bed being a large informal one raised in tiers by the aid of rustic timber, its position in a sunny nook on the lawn being a particularly happy one. Also comes the memory of a long winding border backed with shrubs. This was planted in longitudinal rows with *Calceolaria amplexicaulis*, *Salvia patens*, one or two varieties of *Pelargoniums* now obsolete, and an odorous foliaged one, still fortunately with us, the old tall *Ageratum*, *Cuphea platycentra*, *Heliotropes*, and a straggling *Lobelia* in front which had a habit of trailing through its neighbours, peeping up in unexpected places in a way of which no well-behaved modern bedder would be guilty. What a treat that border was, surely! and in its thin planting how little it taxed the resources of the old-fashioned gardener and his antique "grinhouse" heated by a flue. Still it was his pride, and he grudged not a good annual dressing of manure and leaf mould in which the occupants grew rampant—a veritable outrage on orthodox bedding, but charming withal.

Among the bedding plants of thirty years ago were *Nierembergia gracilis*, an elegant little plant for bordering; a variegated *Alyssum*, locally known as "*Crystal Palace edging*," *Cineraria maritima*; *Coleus Verschaffelti*, for warm positions, which went well with a bordering of *Gnaphalium lanatum*; such *Pelargoniums* as were then in vogue, which, with other things, have been previously mentioned. Purple King, Snowflake, and Firefly *Verbenas* played a prominent part in old-fashioned bedding arrangements. So vast has been the improvement upon these old types of *Verbenas* that one regrets they are not more commonly employed for summer adornment. Seedlings are of robust habit, and a packet of mixed seeds of a good strain raised annually, and planted out thinly, make an interesting display. Beyond a few pegs to dispose the first strong growths in the way they should go, they give no further trouble, and flower continuously till late autumn.

The later methods of crowded planting: severe restrictions of growth among higher bred bedders, with the heavy demands upon room, time, labour, and expense generally, have brought with them

the Nemesis of fate. Few regret it, and rightly so; but vain would I plead for some, at least, of the old-fashioned bedding plants; and, above all, for the more natural methods employed in their cultivation thirty years ago.—INVICTA.

LONDON GARDENS OVER FIFTY YEARS.

No. 6.

FORTY or fifty years ago there was a well marked contrast between the burial grounds of the East and West of London, with a few exceptions. Neglect and poverty left their impress on most of those of East London, but those of the West were usually made more cheerful by plants and shrubs, expressive of leisure, also, no doubt, of money. But still, some of the latter were far from being what they might have been, even till recently. Addressing his congregation on a Sunday in 1878, the Rev. H. R. Haweis remarked that he had visited their parish ground in Paddington Street, Marylebone, and found oystershells, cast off hair-plaits, crockery, parcels of broken meat, dead and living cats, while on a grave near the centre were twelve kettles, two coal-scuttles, and three old hats! Some folks doubted, but they went and were satisfied. This 2-acre plot is turned into a garden now, having been laid out by the Marylebone Vestry in 1886. The year before, the larger Paddington Churchyard, which contains the grave of Mrs. Siddons, was laid out at a cost of £2000. Mrs. Basil Holmes relates that she was witness to the delight of the children when on the day of opening they were allowed to enter a garden, which seemed to them like fairyland. A valuable little garden, opened by Lady Hobhouse, in June 1892, is that attached to St. Ann's, Soho, and another important one of West London is that upon the much fought-over ground of the Tabernacle, Tottenham Court Road. Farther north we have a fine garden of 7 acres formed from the old ground of St. John's Wood Chapel, which abuts on the Regent's Park.

Some comment has been made upon the scarcity of public gardens, just where we might expect to find most, in that part of London which is often called "the district of the squares." Were all these joined together they would form a park of many acres. There is Russell Square of 10 acres, Grosvenor, Portman, and Euston Squares of about 7 acres each, others of 4 and 5 acres, nearly all now being reserved as private gardens, some very little used by the privileged

few. The need of recreation grounds in this district is lessened by the fact that the extensive West-end parks are within an easy distance; still it has been asked lately why some of these at least should not be open to everybody, and eventually I expect they will. One difficulty is, that occasionally public gardens in certain much frequented districts of London are made the rendezvous of betting men and doubtful characters, against whom precautions would have to be taken.

However, as things are, such squares do serve one purpose of importance—they supply air, which is comparatively free from smoke and noxious gases. Many of these squares, considered as gardens, may be said to have undergone a notable improvement during recent years. The beds are kept more tidy, they contain a greater variety of herbaceous species, while the spring and summer have their special display of flowers. We miss some trees and shrubs we used to see in the squares. Robinias are less numerous now; of *Phillyreas* there were a few, but they have entirely vanished; nor is it often we come upon a *Magnolia* or a *Rhododendron*. But other species have been planted better suited to the atmosphere of London, especially evergreens, which look bright during winter.

Several old authors speak of the pleasant and extensive gardens that belonged to the mansions of nobles along the Strand, two of the larger were those attached to Somerset House and Northumberland



FIG. 69.—MR. J. OLLERHEAD.

House. No living man can remember the old royal gardens of Somerset House, famous in Stuart times, but from its terrace we view the Embankment, where a new garden exists which would amaze worthy Parkinson and his friends of the seventeenth century. The gardens of that stately mansion at Charing Cross, so familiar to by-passers with its lion crowning the front, was removed in 1874, and the gardens also cleared to form new streets. There were some flower beds, but the grounds were chiefly remarkable for its shrubs and trees, many of them of good age, which I was sorry to see cut down. Not distant from the Strand, in sight of it is Covent Garden; that great emporium where every kind of horticultural produce can be purchased, reminds us of the convent garden, really ground belonging at first to Westminster Abbey, and which came into the hands of the Bedford family about 1552. In the Protectorate, the market began with a few stalls under the trees outside the wall of Bedford House.

The neighbourhood of the Strand is not likely to afford many green spaces or flowery nooks, what squares there are, with one exception, being small and paved; its churchyards, mostly small, have not been converted into gardens; those of St. Mary-le-Strand, St. Clement Danes, and St. Paul's, Covent Garden, are closed to the public, nor, if open, would they be attractive. Trafalgar Square, with its 4 acres, has only a few trees and shrubs, much space being occupied by the fountains, the rest is paved. At first some people were desirous of having the centre open, and the corners formed into shrubberies, but this proposal was rejected. The small ground of the Chapel Royal, Savoy, is neatly kept; it belongs to Her Majesty, as Duchess of Lancaster, and was laid out by her some years ago, the seats being given by Lord Meath. A print of the time of George IV. shows sheep grazing there.

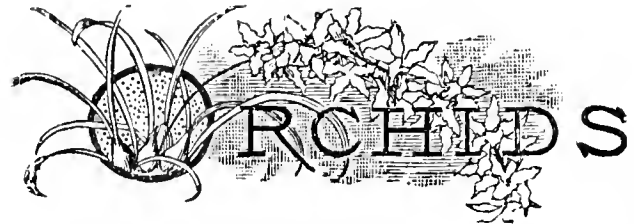
Then by the Royal Courts of Justice we have a space of about an acre which was laid out during 1889, and gives a "refresher" to gentlemen of the law, also to others quitting the buildings. Nor is it far from the Strand to the Middle and the Inner Temple Gardens, but these, though worth inspection, we cannot enter without permission. Between the Strand and Westminster Bridge, rising above the Embankment, there yet remains a fragment of the old garden that was attached to the Palace of Whitehall. The Embankment Gardens, which reach from the Temple to Chelsea, with the exception of a small space in Westminster, contain fourteen acres dedicated to the public, and show one of the very notable improvements effected in Victorian London.

All over the metropolis, through the agency of the County Council, the Metropolitan Public Gardens Association, various vestries, and some private persons, the number of trees has increased of late; these have been planted along many roads and in other suitable spots. Mrs. Meynell, who has recently been writing about London localities, is rather inclined to pity its trees, those "that have their roots under pavements, or stand in corners left by the chance medley of London streets." She thinks it is hard upon them to be in perpetual light and never withdraw into the darkness associated with freedom or repose. On the whole our trees do not seem any the worse for this, but some there are that the gaslight may not suit, nor perhaps the electric light. Herein we are returning to the plan of our ancestors, for they had many trees in the old city, only of a few species though, such as the Elm, the Poplar, the Ash, the Oak, but it appears this does not flourish now in London. The Plane, so well adapted for a town life, is no native of Britain; Lord Bacon is stated to have planted the first Oriental Planes in his garden at St. Albans; some of these are said to be still living. For the American Plane we have to thank John Tradescant of Lambeth, who brought it over in 1636.

Somebody made a computation during 1877 that there were then, within what we should call the city limits, about 1200 trees (excluding all mere shrubs), and in this number thirty species or varieties at least, but the predominating tree was the Plane, of which 520 were counted; chiefly, however, of the Western species, of which we have many fine examples in London and its suburbs. But the Eastern species will flourish in towns, and its foliage is denser even than that of its relative, though the two nearly resemble each other. Some Limes have been planted lately. I would like to see more of this tree about; it has a cheerful appearance, and often displays, in London, new leaves towards autumn. Then the common Sycamore, the Maple, and some of its varieties, are occasionally planted, also the Larch, but Pinaceous species generally do not tolerate smoke. It is odd that Horse Chestnuts are not more numerous in our suburbs, since this is quite a tree for towns. Again, there are exotics which make themselves at home among streets, such as the Ailanthus, or "Tree of Heaven," which, for its handsome foliage, might oftener have a place along our roads. Corners and slips which were formerly vacant have now, in many London streets, been planted with shrubs, evergreens being preferred. There might be a freer use of climbers to cover lengths of windowless walls, such as the Clematis, the Jessamine, the Passion Flower, the Periwinkle, in addition to the familiar Ivy.

Writing about the Bermondsey of our time, a journalist comments on the fact that a century ago the district was chiefly rows of marshy fields. Halving that period, however, we can remember its many

ditches, where Watercresses might have been grown, and weather-beaten Willows. Much of Bermondsey was forest long before, and extensive floods sometimes swept along the trees and rushes. It had an abbey of some renown, and its abbey garden names still linger about Bermondsey, which carry us back in thought to the Middle Ages. But horticulture is getting a chance there; gardens are multiplying in that unpromising locality; one of the latest was opened the last day of March by Dr. Cooper, L.C.C. This is situated near London Bridge, and was once the burial ground of Guy's Hospital, but is now becoming partly a garden, partly a gymnasium, and the old trees yet standing will look down upon a cheerful scene before long. There is in summer a good show of flowers in the gardens of St. Mary Magdalene and St. John's, Horseleydown; Southwark Park, too, of 60 acres, is on the border of Bermondsey.—J. R. S. C.



CYMBIDIUM DEVONIANUM.

THOUGH not so large or showy as the Lowianum and giganteum form, this is an interesting and very pretty species, and generally a favourite when properly grown. The plant is of dwarf habit, with pseudo-bulbs only an inch or two in height, and large leaves. The racemes are pendulous, and contain a large number of flowers that are variable in colour, but usually yellow or greenish more or less marked with purple. The lasting quality of the flowers is not so great as that of the above mentioned, but they are not by any means fleeting.

C. Devonianum likes a moist and shady position in an intermediate house, but is best grown in baskets suspended from the roof, both on account of the flowers and the liking it has for light. These baskets must not be unduly large; nor must the plant be frequently disturbed, as it is always more free flowering when well established and a bit pinched for pot room. The compost will be substantial, and may consist of equal parts peat, loam fibre, and chopped sphagnum moss, enough charcoal and crocks being added to insure porosity. C. Devonianum is a native of the Khasia mountains, and is one of the many plants sent home to enrich the Chatsworth collection by Mr. Gibson, who found it growing in vegetable refuse in tree forks.

DENDROBIUM MICANS.

Though raised as far back as 1879, this pretty hybrid is still far from plentiful. In its better forms—i.e. those raised from the Assam form of D. Wardianum instead of the longer stemmed Burmese kind, the plant is dwarf, and the flower of splendid colour and substance, indeed there are few to rival it for colour even now. The sepals are a pretty rosy mauve, and the lip comes nearer D. Wardianum than its other parent, D. lituiflorum. D. micans has the merit of being one of the most free flowering of hybrids, and may be grown under the conditions usually advised for this section.

LÆLIA LOBATA.

With the rush for new hybrids and species among Orchids it is pleasant to note an old friend that is seen flowering only too rarely. L. lobata has long been in cultivation, more or less, but probably quite half of the present day Orchid growers have never seen it in flower. A plant in flower here has very distinct looking blossoms, the side lobes of the lip being a very deep crimson purple tint, the front being much lighter and overlaid with lines of a deeper tint. Lælia lobata is by no means free flowering, but as a matter of fact in many collections plants that are at all shy flowering are never left alone long enough to bloom.

The plant in question is flowering upon pseudo-bulbs that are hanging quite out of the pot, which it has sadly outgrown. But this is better than a prim plant and a flowerless one. Its habit is to flower upon the last year's pseudo-bulbs that rest in sheath, like those of a Cattleya Trianae. Any undue excitement, however, will cause the plants to grow out of season, starting awry at the base before the new bulb is finished, and from such plants it is useless to expect flower sheaths even, let alone flowers.

The plant likes heat, and may, in fact, be grouped for purposes of culture with Cattleya superba or Lælia grandis. It also likes abundant light, being found growing naturally on high cliffs and rocks quite exposed to sun in the neighbourhood of Rio. To place a plant of this kind in a shady house and water it regularly all the year round is to court failure quite as much as to be always pulling the roots about. There is no doubt it is often severely dried in its native place, and under cultivation requires a good rest. This plant is sometimes met with under the name of Lælia Boothiana, this having been given by Reichenbach, but Dr. Lindley first named it as above in 1847.

MASDEVALLIA GELENIANA.

Hybrid Masdevallias are now getting fairly numerous, and very beautiful are some of them. The one named is a hybrid raised, it is said, by Messrs. Sander & Co. from *M. Shuttleworthi* and a variety of *M. Estradæ*. As may be expected, it is a beautiful little plant, with bright yellow sepals, each elongated into a deep yellow tail, as in *M. Shuttleworthi xanthocorys*, the broader portion of these segments being spotted with crimson (fig. 70). It has been frequently exhibited, and though not exactly one of the greatest rarities, is not common, or it would doubtless soon become very plentiful.

SOBRALIA XANTHOLEUCA.

Many have been the complaints that the lovely blossoms of *Sobralia* do not last longer in good condition; but there is always the comforting reflection that numbers are produced successively, and therefore a display kept up for a long time. This species is no better than its fellows in respect of its evanescent character, but it is a lovely form while it lasts, the large flowers being of two distinct shades of yellow, the deeper occurring upon the lip. Its culture may be summed up very briefly; it requires large pots and a liberal amount of compost, ample moisture all the year round, and a shady position in the cool end of the intermediate or Cattleya house.—H. R. R.

BULBOPHYLLUM ERICSONI.

This striking species, having just passed out of flower, enables one to speak more fully of its character and requirements. It is of rather straggling habit, the bulbs being produced some 3 or 4 inches apart, on a creeping rhizome, and is therefore best grown on a raft, with a very little compost under the plant, which must be made thoroughly secure to prevent rocking. The flowers are amongst the largest of the whole family, some 7 or 8 inches across, and are produced seven or eight together on a slender spike. The ground colour of the sepals and petals is a yellowish green, heavily spotted with rich purplish brown; the lip is bright red or reddish purple, and it has a curious rocking arrangement, which is peculiar to some other members of this family. *B. Ericsoni* requires the temperature of the warmest house the whole year round, and was introduced by Messrs. F. Sander & Co. through the collector whose name it bears. It gives off rather a foetid and disagreeable odour, and lasts about a week in flower.

CYPRIPEDIUM BELLATULUM ALBUM.

This beautiful albino is again in flower, and is no doubt one of the loveliest of *Cypripediums*. Like the typical plant it is in many hands a bad grower, but no doubt when our knowledge of its requirements is more advanced it will be as easy to grow as any. Having been successful with it, I would advise anyone to give it a trial, as it is worth its place in the most select collection. The cause of failure I believe is water in a great many cases. It must never be watered above, and great care should be taken that the plant does not receive an excess of water at any time. I have found they succeed best in pure loam fibre from a limestone district, mixed with some fine broken crocks, and a sprinkling of coarse Bedfordshire sand. They should occupy a warm house, and during the winter months very little water will be required; just enough to prevent its shrivelling, as it is apt to damp off if it gets at all wet. It was introduced by Messrs. Charlesworth & Co. of Bradford, through Mr. Moore, from the Shan States, and was first flowered by Sir F. Wigan, Bart., of East Sheen, who received a first-class certificate from the Royal Horticultural Society for it.

DENDROBIUMS INFUNDIBULUM AND JAMESIANUM.

These two members of the nigro-hirsute section are sometimes considered refractory subjects, and are often recommended to be grown in a cool house, but I could never produce a specimen to my satisfaction in such a temperature. Since placing it in a shady corner, however, at the cooler end of an intermediate house the growth has been luxuriant, those of the former often reaching 36 inches in length, and both produce flowers in abundance. The blooms last in perfection for several weeks if kept from the damp. Great care should be taken to keep in check the white scale which infest them, and they should be placed in the smallest pots possible, as sour soil will do immense harm. The compost recommended for the deciduous section will answer their requirements.—J. BARKER, *Hessle*.

MR. W. P. BURKINSHAW'S ORCHIDS, HESSLE.

I HAVE often been puzzled to know where the immense quantity of imported Orchids get to. A short time ago I had an opportunity of inspecting the above named collection, and taking it as a fact that there are probably hundreds of somewhat similar collections in the three kingdoms, one gets one's eyes opened somewhat on the matter. Specialism in some form or other seems to be the order of the day in most trades and professions, horticulture not excepted, and everyone must be pleased to see this development.

Orchid lovers who know the collection under notice, and the excellent manner in which the plants are tended by Mr. Barker the

gardener, will agree with me in saying that a visit must be profitable. There are six span-roofed houses, with ends pointing north and south, filled with Orchids. The four houses filled with *Cattleyas*, *Lælia*, *Dendrobiums*, in fact all the species and varieties that require warm temperatures, are about 18 feet in width; the two filled with cool house Orchids are narrower, having stages on each side and a path in the centre. The internal arrangements of the former are quite different from any I have hitherto seen. Instead of the usual stage the central space is open, or at most is occupied with a group of small Palms, *Clivias*, or any other free-growing stove plants not too liable to encourage insect pests. There are the usual side stages all around on which the plants of the longer bulbous Orchids, such as *Lælia purpurata* and tall *Dendrobes*, are grown. The bulk of the shorter bulbous plants are grown suspended from the roofs. Small iron rods are fixed at right angles to the sashbars; on each side of the span-roof stout hooks are frequent on the bars. As will be seen, it is necessary to have the plants growing in either Orchid baskets or pans. Some few are in ordinary pots with holes under the rim to put the wires through for hanging them.

The general appearance of this arrangement is perhaps not so striking as is the more familiar way; still, anyone who will think out the natural conditions under which the bulk of epiphytal Orchids are



FIG. 70.—MASDEVALLIA GELENIANA.

grown, will at once see there is much in its favour. There can be no doubt but that the best growing atmosphere in the general run of plant houses is that portion distant, say, between 18 inches and 3 feet from the glass roof. Mr. Barker tells me he has no difficulty in getting such varieties as *Cattleya gigas* and *Lælia anceps alba* in variety, to make sheaths and flower spikes quite freely when grown in the way I describe; and, as will be known to many Orchid growers, these varieties do not do this freely under ordinary treatment. No doubt there is a little more trouble in watering them, though judging by the expert way Mr. Barker reached the plants down with a small rod with a hook at its end, it is not in his case more troublesome. He believes in dipping the plants in a movable tub, as this insures a thorough soaking when it is done. On an average this is not required more than once a week he tells me, even in the growing season. Of course there is daily attention as to damping the pots with the syringe, hence the necessity of having free-growing plants underneath, so that they may not be injured by too much moisture. It is only fair to say that the bulk of Mr. Burkinshaw's Orchids are not large specimens as yet, otherwise there would be more difficulty in growing them in this way.

It is necessary to have a small house set apart for exhibiting them when in flower. Speaking broadly, I am convinced that the above mode of growing many species and varieties is the right one. In saying this I do not for one moment lay claim to any special knowledge of Orchid culture.

Amongst the kinds in flower was a healthy plant of *Lælio-Cattleya Bella*, with one spike and three flowers open. It is most beautiful, and as described in the *Journal* of March 30th, page 250, is a hybrid between *Lælia purpurata* and the true old *Cattleya labiata*. The side stage on which it was growing was filled with healthy plants of all the choicest of *Cattleyas* in cultivation, and so far as I could see there

was not one unhealthy. Amongst other Cattleyas in flower were *C. Mendeli*, *C. Warszewiczii*, *delicata*, *Trianae*, also a fine variety of *Lælia elegans*.

So far as Orchids in flower are concerned the sight to see was the house filled with Dendrobies in variety. It was certainly the finest display of Dendrobies I have seen either in a public or private place. It was a cold bleak March day when I was, at Hessele. To be ushered at once into this glass house full of such a mass of floral beauty was, to say the least, a sudden transformation scene, very real and very pleasant to see. My guide is steeped to the lips in hybrid Orchid lore, and soon had me a bit mixed by his rapid and full description of the parentage and history of many of those in flower. I shall not risk your striking this portion of my notes out by not sending them. First, because I am not sufficiently an Orchid expert to write them correctly, unless I had more time with Mr. Barker; and secondly, I should not like to send anything I am not convinced is near the truth. There would be fully five to six thousand flowers of Dendrobiums open and opening when I was there. The largest number of any one variety would be *Dendrobium nobile nobilissimum*. I counted about 500 flowers on one plant. Mr. Barker told me many of his plants were propagated from eyes by himself. Some fine plants of *D. nobile* from the Shan States on the Chinese border were fine both as to colouring and size of flower. This is a splendid type of *D. nobile*, and anyone who can get hold of it true to name will find it well worth their care to cultivate.

I append names of a number of other Dendrobies, either in flower or showing for flower. *D. Ainsworthianum*, *D. nobile Murrhianum*, *eriosumum*, *leucopterum*, *splendidissimum illustre*, *nobile Jesse*, *n. Juno*, *n. Cybele*, *n. Backhousei*, *lituiflorum* from Mr. Chamberlain's collection. *D. nobile hesslensis* is a very distinct variety, with a modest drooping habit of showing its flowers. Some of the individual flowers of *D. nobile* were fully 4 inches across.

In the Cypripedium house were well grown plants, comprising some of the best varieties. Amongst others in flower were *C. Leeatum*, with eight fine flowers; *Calypso*, four flowers; *Pollettianum*; *nitens*, Burkinshaw's variety, with flowers 6 inches deep; some had been open three months. A fine healthy plant of the rare *Angræcum Veitchii* was in this house, also some well flowered plants of *Dendrobium Jamesianum giganteum*, with flowers over 4 inches in diameter. *D. infundibulum* and *formosum*, full of flowers.

There are, as I said before, two houses of cool Orchids. The plants looked in perfect health, and were evidently very happy in their surroundings and general treatment. They are raised up somewhat nearer the glass during the winter than is often seen. An open tank is under each side stage for holding the rain water from the roofs of the houses. Mr. Barker prefers rain water for Orchid watering generally, when he can get it, but has no hesitation in using the laid-on town water supply, which I should presume, from the geological formation of that part, will be of a chalky nature. There were not many *Odontoglossa* in flower when I was there, but it was easy to see that in a few weeks' time there will be a fine display. Perhaps by the time York Gala comes round Mr. Barker may be able to try his hand with a group of them—at any rate I hope so, as such plants and varieties as Mr. Burkinshaw so freely purchases, and his gardener so successfully cultivates, are sure to afford pleasure to the thousands at York.—H. J. C., *Grimston, Tadcaster*.

CAMPANULA PLANIFLORA.

ON page 283, above the signature of "Alpinus," I observe a note on *Campanula planiflora*, *Lamarck*, syn. *C. nitida*, *Aiton*; and it states that the plant was "introduced from America in 1731." This is quite possible, but it is tolerably certain that no such plant has ever been found wild in America, or, as far as the records of Herbaria bear evidence, anywhere else. Botanical writers, from an early date in last century to this day, have followed one another in saying that it was found "in the neighbourhood of Hudson's Bay."

Asa Gray, in his "Flora of North America," vol. ii., page 14, disposes of the plant in the following short summary:—"Long ago described from cultivated specimens, vaguely attributed to North America, is wholly unknown in the wild state: apparently allied to *C. persicifolia*, *L.*, and not North American." On the other hand, De Candolle, in his "Monograph of Campanula," published in 1830 (page 312), devotes a page and a half of quarto size to an attempt to investigate its history; but beyond mentioning its resemblance to *C. persicifolia*, he does not throw much light upon it.

Strangely enough, "Index Kewensis" refers it to *C. pyramidalis*, a species to which it bears a very distant resemblance. I feel little doubt that the different types of the plant are stunted forms, or possibly hybrids of *C. persicifolia*. Plants of it I have bought from nurseries have more than once grown into *C. persicifolia*, and I am now nursing a seedling plant which came up in my garden spontaneously near *C. persicifolia* which has all the characters of *C. planiflora*. If it is a hybrid of *C. persicifolia* I am at a loss to suggest any probable pollen parent for it.—C. WOLLEY DOD, *Edge Hall, Malpas*.

NOTES ON PEACHES.

THE BEST VARIETIES.

ON page 219 "S. Yorks," contributes a very interesting note on the above subject, and although he agrees in the main with my selection of varieties, he points out clearly two instances in which he disagrees with me. The object of my former note was to elicit such criticism, as none of us can know too much about the matter.

In regard to Alexander, let me observe that although I considered a house of this variety would prove a remunerative investment, it was not for that purpose alone I recommended it. Its strong point is that it is the earliest we have, and as such is of great value where very early Peaches are required. Of course we should like it all the better if the fruits were larger and of better colour, but the weak point about nearly all early varieties of fruits is that they are inferior in point of either size, colour, or flavour to later ones. They are grown for their earliness. In regard to the commercial aspect of the case, it is an undoubted fact that the largest and most tempting looking fruits usually command the highest prices, but I also know that in the London markets Peaches in May are eagerly bought up at good prices, and even if the prices obtained are scarcely so good as those for finer fruits a few weeks later, we must not forget that we can obtain a greater number for a given space without overcropping the trees. It is also a great point to be the first in the market, and thus secure an outlet for successional crops.

"S. Yorks," considers Bellegarde and Crimson Galande are probably the two best midseason Peaches in cultivation, whereas the latter was not included in my six. It is certainly a splendid variety, but I have as yet failed to see in what respect it is superior to any of the six I named.

"A Kitchen Gardener" rightly contributed a word of praise for Barrington, which is a fine telling fruit—when we get it, but this variety is not noted for uniformity of excellence in gardens generally. In some soils and situations it succeeds splendidly without any special attention being given, in others the fruits drop far too freely during the stoning period, and split stones are plentiful in those retained on the tree. Applications of lime would probably improve matters to a certain extent, but I fear that until we understand its requirements better, Barrington will have to give way for better doers. "Kitchen Gardener" also casts a decided vote for Crimson Galande; let me ask him which of my six he would cast out to make room for? I presume it would be Royal George because he finds this grand old favourite subject to mildew.

On page 252 I see my friend, Mr. H. Markham, puts in a good word for Dymond when grown on open walls. I quite agree with him, as when I once paid him a visit at Mereworth Castle Gardens in Kent he showed me fine trees of this variety carrying heavy crops of fruit. Mr. Markham also points out that flavour in Peaches is to a great extent regulated by the manner in which the trees are managed; overcropped trees which do not produce fruits with a good depth of flesh can never be noted for their fine flavour; at the same time it is quite possible to grow far heavier crops than the one fruit to a square foot which old writers recommended, and yet have them of large size and fine flavour; it is all a matter of high feeding and skilful attention.

I have had no experience with Goshawk in the open air, but for culture under glass I should not include it in the best six, for although its flavour is excellent it is not one of the best shaped fruits we have, neither does it possess a taking colour.

PEACH TREES DROPPING THEIR BUDS.

ON page 252 Mr. Markham raises once more the vexed question, "What is the cause of early forced Peach trees shedding many of their buds?" My experience is, that it is caused in some instances by an unfavourable condition in one respect, in others by a combination of adverse circumstances. One well-known cause, with which all gardeners are acquainted, is allowing the borders to become too dry during the period that elapses between the gathering of the fruit and the falling of the leaves; and I fear that in many well-managed gardens this point does not receive enough attention. So many other affairs are constantly pressing upon us during the summer months, that it is so easy to slightly neglect this important detail. The results are not perhaps always disastrous, but pronounced enough to cause annoyance when the trees are started.

Again, if red spider secures a firm footing during the time the fruits are ripening, many of the leaves fall prematurely, and unless prompt measures are taken bud-dropping is certain to follow.

There is also the matter of over-ripening the wood. When trees which ripen their fruit in June are grown in light modern houses, spells of hot weather will, under the best of management, cause both wood and leaves to perform their functions too quickly, and they practically reach the resting stage before the cold nights of autumn come. If examined at forcing time the buds on such trees will in some cases be found brown in the centre when cut through; such must, of course, inevitably drop when the trees are started. Shading after the fruit is gathered is of great benefit under such circumstances.

In regard to soil renovation as bearing upon this matter, I think we may safely assume that trees which have perfected good crops of fruit the previous year, and do not gum, are not far wrong at the roots. It is in the matter of watering, and in keeping the foliage clean, that we must look for the remedy for bud-dropping. We must also keep constantly in mind that the best of management in these respects will be nullified by a too free use of fire heat when the trees are started.—H. D.



RECENT WEATHER IN LONDON.—The weather in and around London since Saturday last must have been very unacceptable to travellers, though gardeners would probably be well satisfied. There have been numerous showers and much brilliant sunshine on each day, but fortunately for the expanding buds no frosts have come. In many gardens the rain would be very acceptable, as the supply of moisture is still very short. Wednesday opened bright with a rather cold wind.

— **ROYAL HORTICULTURAL SOCIETY.**—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, April 18th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. In addition to the Society's ordinary meeting, the National Auricula and Primula Society will hold its annual show, and there will also be an exhibition of Daffodils. At three o'clock a lecture will be given on "Asparagus, Forced and Outdoors," by Mr. G. Norman, F.R.H.S.

— **LIGUE HORTICOLE L'UNION.**—The Committee of the Ligue Horticole l'Union, at the exhibition to be held at Mont St. Amand, near Ghent, has decided to offer all foreign nurserymen who may be present in Ghent during the exhibition, from the 30th of April to the 9th of May, a free entrance ticket, available for the whole time the show lasts. Those who desire a ticket should write as soon as possible to the Secretary, Ligue Horticole l'Union, Mont St. Amand, Ghent.

— **SPARROWS AND CARNATIONS.**—I have never known these mischievous birds so destructive as they have been this season. Nothing has escaped them, and they pass from one crop to another without prejudice until they come to the Carnation bed, where they revel. It is sad to see fine plants of these beautiful flowers ruined in what seems to be absolute mischief, for the leaves are not eaten, but simply picked off and thrown down. When a bed is reserved entirely for Carnations this can of course be netted, but the plants that are grown in herbaceous and mixed borders are badly cut about.—B. S. E.

— **THE GARDENERS' COMPANY.**—A meeting of the Court was held on Thursday. Mr. W. A. Bilney was admitted to the freedom and livery. A scheme for admitting members of the craft and working gardeners to the Company's freedom, and for granting trade certificates of competency on the result of an examination under the auspices of the Company, was laid before the Court by Mr. C. Welch. After considerable discussion the scheme was referred to a Committee, consisting of the Master (Sir William Farmer), Mr. N. N. Sherwood, Mr. C. Welch, and the Clerk (Mr. R. Gofton-Salmond). It was also decided, says the "City Press," to proceed with a new edition of a short account of the Company which was issued in 1890. A proposal to prepare a history of the Company and of gardening in the City of London was also favourably received, and reserved for fuller consideration. Sir William Farmer, at the close of the business, entertained the members of the Court at dinner, Mr. W. A. Bilney, the newly elected liveryman, being the guest of the evening.

— **APRIL SHOWERS.**—The considerable though steady rainfall of Sunday last has proved to be most welcome, for whatever may have been weather conditions farther north, southwards there has been very little rain since February, and the month of March, between wind and frost, had made the soil very dry on the surface. We have had a few showers in April previous to Sunday, but they were slight, and very soon dried by strong winds. Sunday was an ideal April day in its moisture; not a hard rain, but a gentle persistent downfall, that thoroughly moistened the soil, because it penetrated; none too warm, it was generally in consonance with the season. Whilst giving all early sown seeds and late planted things a good help, it should also greatly benefit the pastures, and thus render the farmer good service. Rain also as it emanates from cloud staves off frost, and as the Plums, Pears, and Cherries are fast expanding their bloom, we have little desire to see the days too bright and hot, as so often these are followed by nights of low temperature and white frosts. Many persons have assumed that because we had such heavy rainfalls in February, that enough moisture had fallen to last for months. March, however, showed us that if the air can be absorbent, so also can the soil, for every trace of excessive moisture had entirely disappeared, and rivers and streams had fallen low. A dripping April will be a great blessing to our gardens and crops.—A. D.

— **GARDENING APPOINTMENT.—CORRECTION.**—A correspondent writes:—A short time ago I wrote you that Mr. Mossop had been appointed gardener to Harvey Goodwin, Esq., Orton Hall, Westmoreland; but Mr. Mossop declined, without entering, the charge, which has been accepted by Mr. Lamb, late of Singleton Park, Kendal.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held at the Institute of Civil Engineers, Great George Street, Westminster, on Wednesday, the 19th inst., at 7.30 P.M., the following papers will be read:—"Soil Temperature," by Mr. Henry Mellish, F.R.Met.Soc.; "Some Phenomena Connected with the Vertical Circulation of the Atmosphere," by Major-General H. Schaw, C.B.

— **HAWFINCHES AND PEAS.**—I was pleased to see at least one good word for the hawfinch, or butcher bird, as it is termed, for, as Mr. J. Shalford says, they are beautiful creatures. I have suffered as much as most people from their depredations, and have often felt inclined to deal out rather summary justice, but so far have not killed a single bird. I think they are most numerous in the eastern midland counties; at any rate I have never seen so many of them in the West or North of England. The birds are naturally very shy, and their presence is often unexpected in the garden until the Peas are attacked. I have never seen them injure any other crop.—C. H.

— **THE DUMFRIESSHIRE AND GALLOWAY HORTICULTURAL SOCIETY.**—The prospects of the resuscitated Dumfriesshire and Galloway Horticultural Society are, in the opinion of its promoters, decidedly promising. The show is to be held in the Drill Hall, Dumfries, on September 6th. By a large majority, the Town Council of Dumfries, at a meeting on 6th inst., agreed to grant a sum, not exceeding £15, to purchase a challenge cup for the Society. It is proposed that the cup be competed for by local horticultural societies. It is proposed to hold occasional meetings for the discussion of horticultural subjects, and the exhibition of plants of interest. The inaugural lecture, one on "Daffodils," is to be given by Mr. S. Arnott, on the 18th April.

— **CORNISH POTATOES AND MARCH FROSTS.**—It is said, "He who is fastest at the start is seldom good to stay," and this appears verified this year with the early Potato planters in West Cornwall. They planted, as usual, at the latter end of January, and in February growth proceeded freely in the mild weather until the third week in March. Then there was a terrible reckoning. Whole fields, up in rows, and nearly ready to mould, were cut down with the frost and displayed a blackened wreck. Men who planted much later up country will put Potatoes on the market before Cornishmen, whose vaulting ambition has o'er-leaped itself this season.—("Rural World.")

— **EMIGRANTS' INFORMATION.**—The April circulars of the Emigrants' Information Office and the new annual editions of the penny Handbooks show the present prospects of emigration. The notice boards are now exhibited, and the circulars may be obtained free of charge, at more than 350 public libraries throughout the country. April is the best month to arrive in Canada; there is a good demand for experienced farm hands, except in British Columbia. In New South Wales, owing to the severe drought in the Western districts of the colony, and the great loss of sheep, station hands have been dispensed with, and there is consequently no demand for them. Recent reports from such widely distant parts as Walgett, Wilcannia, Mudgee, Orange, Cooma, Bourke, Jerilderie, Lithgow, Queanbeyan, Wagga Wagga, Hillstone, Dubbo, and Young state that there is practically no demand for ordinary farm or station hands. At Uralla and Grafton in the far north there is a fair demand for farm labourers and carpenters, and a good one for servants. Really skilled dairymen and thoroughly capable farm labourers would probably have little difficulty in obtaining employment in many parts of the colony. In Victoria local labour is generally sufficient, but there are excellent openings, as a rule, for farmers, dairy farmers, and fruit growers, if they have a little capital and some experience of the country. There has been a general rainfall, and a very good harvest, and the dairy industry has improved. In South Australia there is no improvement in the demand for labour. In Queensland there is a general demand throughout the colony for ploughmen and other farm labourers, and for female domestic servants. Free passages are again being given to labourers and female domestic servants, and some assistance towards their passages is also now being given to farmers, market gardeners, dairymen and fruit growers, and their families; application must be made to the Agent-General, 1, Victoria Street, London, S.W. In Western Australia there is a good demand for farm labourers in the South-West, and the mining industry continues to expand. The assisted passages to the colony have been discontinued. In Tasmania there is no general demand for more mechanics or farm labourers.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1899.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
April.										
Sunday .. 2	S.S.W.	49.5	48.1	51.5	47.4	—	49.1	45.9	44.2	40.8
Monday .. 3	W.S.W.	49.8	46.9	60.6	47.8	—	49.5	46.5	44.6	45.5
Tuesday .. 4	S.S.W.	51.9	48.6	54.2	44.9	0.07	48.9	47.1	45.1	37.1
Wednesday .. 5	W.N.W.	52.0	46.8	58.5	42.1	0.02	48.0	47.1	45.4	33.2
Thursday .. 6	W.S.W.	53.8	49.8	60.3	48.4	0.09	49.4	47.3	45.8	39.4
Friday .. 7	S.S.W.	46.8	45.5	52.3	45.9	0.13	50.2	47.9	45.8	37.8
Saturday .. 8	W.N.W.	46.4	41.9	47.5	41.3	0.08	47.4	47.9	46.2	32.6
MEANS ..		50.0	46.8	55.0	45.4	Total 0.39	48.9	47.1	45.3	38.1

A week of south and north-westerly gales, with some showers, and storms of rain, snow, hail, and sleet on the 8th.

— MARCH WEATHER AT DOWLAIS.—Rainfall, 2.22 inches, which fell on ten days. Greatest fall, 1.09 inch on the 25th. Total for the past quarter, 19.07 inches. Temperatures: mean maximum, 52°; highest reading, 73° on the 15th; mean minimum, 27.871°; lowest reading, 12° on the 22nd. The lowest readings we have had were on the following dates:—20th 15°, 21st 13°, 22nd 12°, 23rd 17°, 24th 16°; below freezing point on twenty-two days, amounting in the aggregate to 190° of frost. The wind was in the N.E. and E. on thirteen days, and in the S.W. and W. on ten days. There were seven sunless days. Very cold winds on the whole throughout the month.—WM. MABBOTT.

— GENETYLLIS TULIPIFERA.—In the days when many establishments boasted a cool house, which in the summer was resplendent with Azaleas, and Heaths were rarely out of bloom, the pretty Tulip-flowered Genetyllis was often to be seen. I have not met with a plant of it for some time, but think it is attractive and useful enough to be grown more. A cool greenhouse is suitable for it, and if given the same treatment as is applied to the Myrtles, to which order it belongs, the Genetyllis rarely fails to bloom freely. The Tulip-shaped flower is both pretty and graceful, and the usefulness of the plant lies chiefly in the long time which it keeps in bloom. Like most other hardwooded plants, it should be potted firmly, and it appreciates peaty soil and sand. Care with watering is also necessary, for if the plant suffers through lack of moisture, it becomes unsightly, on account of the leaves falling.—H. A.

— UNITED STATES FORESTS.—A strong effort is being made in the United States to arrest the demolition of the forests of the country, which has been proceeding at an alarming pace for a great number of years. According to a statement issued by the American Newspaper Publishers' Association, the denudation of forest land in the four States of Maine, New Hampshire, Vermont, and New York is progressing at the rate of 1700 square miles per annum. If this goes on without a check, it will not be many years before the timber supplies of the country will grow short, and this is only one point for consideration. In consequence of denuding the country of trees, it is said the level of important rivers and lakes has been steadily declining, and some of the North-Western lakes have been dried up. Another result, says the "Standard," is a decrease in the rainfall, seriously injurious to the agricultural interest.

— CHESTER PAXTON SOCIETY.—The closing meeting for the present session was held at the Grosvenor Museum on Saturday, when Mr. Robert Wakefield, Newton Hall Gardens, read a paper on "Hardy Herbaceous Flowers." Mr. Wakefield has of late years been recognised as one of the most successful cultivators of herbaceous flowers in this district, his exhibition collections invariably carrying off first honours at the local flower shows, and his paper on Saturday bore evidence of an intimate knowledge of all the best varieties of flowers in this interesting class. In the course of his remarks he gave a list of the varieties best adapted for general cultivation, making special reference to those best suited for decorative purposes. He also explained in detail the peculiar methods of cultivation some require before they can be grown to perfection. An interesting discussion followed, after which a hearty vote of thanks was accorded to Mr. Wakefield for what proved to be an interesting and instructive paper.

— POT FRUIT TREES.—When at Easthorpe, Reading, not long since, I was much impressed with the appearance of some twelve or so quite large bush Pears that were growing in 14-inch pots and standing outdoors, where practically they were shifting for themselves. The main stems were as big round as a man's arm. Each tree was some 7 feet in height, very robust, of course kept hard spurred, yet the picture of rude health, and studded all over with fruit spurs. They had been in the pots several years, getting only frequent dressings of dry artificial manure and soakings of liquid manure. It was interesting to notice how robust and productive these trees could be with such restricted root area. They had become too large for the orchard house, and will probably be plunged in the open ground for the summer.—A. D.

— BESCHORNERIA TUBIFLORA.—This is one of the most showy of the half dozen or so species cultivated in gardens, and is worthy a place either as a foliage or flowering plant. It is a native of Mexico, and has been described under the name of B. Coliniana, this name being sunk in favour of the former. On a well-grown plant the leaves are about 3 feet long, by 3½ inches wide. They are green, and beautifully striated with silvery lines, which vary considerably in width. On the young leaves the markings are very distinct, fading as they get older. When young the leaves are upright, assuming a drooping habit with age. The flowers are green, 1½ to 2 inches long, and tubular. They are borne on racemes 6 to 9 inches long, on the upper two-thirds of a scape 5½ feet high. The scape is reddish brown with a glaucous covering. At the base of each branch a rosy pink bract is produced, 6 inches long by 1½ inch wide. Taken as a whole, the bright coloured scape, and bracts with their glaucous covering and the pretty green flowers, an attractive object is made. A plant is now to be seen in flower in the Mexican house at Kew, where planted out it looks perfectly happy. A figure of this species may be seen in the "Botanical Magazine," t. 4642.—W. D.

— SOME EDIBLE FLOWERS.—To give soups a spicy odour the flowers of *Hemerocallis graminea* are used in China. Seven million pounds of these are shipped yearly from the port of Tsching-Kaing to other parts of China, besides being imported to Japan. The sweet fleshy flower heads of *Bassia latifolia* are eaten in the East Indies. They resemble little Figs or large raisins both in appearance as well as in flavour. In order to preserve them they are sun-dried, and they contain 65 per cent. sugar. They are eaten without preparation, but they can also be baked with roasted wheat kernels, or can be made into a sort of ragout. The fleshy fruits of the different kinds of the *Bassia* contain an oil which turns rancid very easily, but which retains the consistency of butter in ordinary temperature. This accounts for the popular name "Butter Tree." Coupin further mentions, says our American contemporary "Gardening," a species of *Colligonum* which is plentiful in the dry prairies of the Southern Lahore. These small trees or shrubs produce numerous small rose-red flowers, which emit a pleasant but intoxicating fragrance, similar to that of ripe Strawberries, and remind one, like those of the *Bassia*, of small dried Figs. These flowers are baked with flour or eaten with roast meat after they have been kept in stone jars at least one night.

— CINERARIAS.—Are the flowers of these plants becoming too large, and are we in danger of losing in them true quality in form and substance, because of the increase of size? When flowers measure from 4 inches to 5 inches across, surely they are not only big enough to satisfy the ambition of any grower, but are large enough to satisfy any requirements. But then what is the gain when such huge flowers result? Certainly fewer of them on a plant, and some material loss of form and substance. Blooms that range from 2½ to 3 inches across are really very large and greatly beyond the dimensions of flowers that were esteemed of the best by the old florists. However, the *Cineraria* is now hardly regarded at all as of the flowers. It is a first-rate greenhouse and conservatory plant, and very effective when well grown and of a good strain. But in the old days there were numerous good named varieties propagated from year to year through the agency of offshoots or suckers. Now we trust entirely to seed, and although there are superb varieties that have been in years past as seedlings named and certificated, still propagated in this way, yet they are not put into commerce, the plants grown ordinarily being raised from seed solely. *Cinerarias* suffer somewhat from being forced in heat, which they neither like nor need, but also from soil too rich, producing foliage of much too luxuriant form at the expense later of the flower heads, and of overpotting, which often leads to root-damping, and sometimes sudden collapse of the plants. The finest collection in the kingdom of *Cinerarias* is grown cool, never overpotted, and always shows good balance between leafage and bloom.—WANDERER.

— **READING GARDENERS' ASSOCIATION.**—"Climbers" was the title of a lecture given by Mr. J. Crooke, of Forde Abbey, Chard, on Monday evening last, when the President, Mr. C. B. Stevens, presided over a good attendance of members. In introducing the subject, Mr. Crooke said that the subject he had selected was an old and very broad one, and it also included a wide range of plants. In arrangement, the gardener should cultivate taste as well as plants, and to get away from old systems which did not lend themselves to our present day needs, also that more use should be made of our native hardy climbers. A discussion followed, in which Messrs. Woolford, Stanton, Neve, Fry, Martin, Purkis, and Townsend took part. A vote of thanks was accorded to Mr. Crooke.

— **FERTILISATION OF ARAUJIA (PHYSIANTHUS) ALBENS.**—The following reference to a recent meeting of the Linnean Society will be interesting to readers of the *Journal of Horticulture*, as it refers to a subject mentioned on page 235 by Mr. Wm. Camm of Battle Abbey. Dr. John Lowe, F.L.S., communicated some observations on the fertilisation of *Araujia albens*, a Brazilian climber, which in the South of England grows in the open air. Last summer it was blooming freely in Lord Ilchester's garden at Abbotsbury Castle, Abbotsbury, Dorsetshire, where the flowers were visited by numbers of butterflies, diurnal moths, humble bees, wasps, and large flies, many of which were captured and imprisoned for a time in the pinching-bodies (Klemm-korper of Müller). All these insects, with the exception of some humble bees in their visits to the nectar left their proboscis behind, and sometimes a leg, being not strong enough to detach the pinching-body. Dr. Lowe described the structure of the pinching-bodies, which are flat, horny plates, situated above the nectar cups, at each angle of a five-sided hollow cone in the centre of the flower, in which is placed the stigma. There is only a small opening at the apex and a narrow slit at the base of each facet of the cone. To the upper point of the pinching-body the pollinia are attached. When an insect has its proboscis caught in the slit, which narrows always to its point, it can only escape by tearing away the body with its pollen-masses, or by leaving its proboscis in the slit. In the former case it carries the pollinia to the next flower it visits, and thus effects cross-fertilisation by leaving the pollen-mass between the anther-wings, whence it rapidly passes into the cone. He had received a number of flowers of *Araujia* from Mr. Benbow, the gardener at Abbotsbury, in some of which he found the proboscis of a butterfly or moth in each of the five angles of the cone, showing the great destruction of insect life caused by the plant. Mr. N. E. Brown, A.L.S., who has made a special study of the Asclepiadaceæ, gave an interesting account of the manner in which the pollinia reach the stigma; and some further remarks were made by Mr. A. W. Bennett.

CHOISYA TERNATA.

EITHER for supplying cut flowers or for home and conservatory decoration from December to May, it would be difficult to name a more useful plant than this member of the Rutaceæ order. Introduced from Mexico as long ago as 1825, it is surprising that this nearly hardy evergreen shrub is not more generally grown, especially as it possesses the merit of being easily managed and adapting itself to all sorts of conditions.

It may be bloomed in 3-inch pots, grown into bushes 5 feet or more through, or trained into standards with a clean stem from 3 to 5 feet high, carrying heads 3 feet through. Half-ripened shoots inserted into sandy soil early in the year and kept moderately close and shady in a propagating case, can, in a temperature of 60°, with plenty of moisture, be grown into plants that will produce a large head of bloom the following spring. These will be found exceedingly useful for interspersing amongst other plants on the greenhouse or conservatory stage, or for house decoration where white flowers are appreciated.

To maintain a continuous supply for the long period mentioned, a good stock of plants is necessary, and if these, after setting their flower buds in the autumn, can be kept in a temperature of about 40°, they will remain in a quiescent state from which plants may be selected and introduced into conditions exactly suited to the forcing of Lilacs and Deutzias. The flowers are pure white with yellow anthers, resembling, individually, Orange blossom, but with a scent more like the Hawthorn. The inflorescence is a terminal, corymbose cyme, and is surrounded with dark green, glossy, ternate foliage, so that a cut spray is a small bouquet in itself, requiring no other green.

Choisya ternata is not at all particular as to soil, but taking into account that its roots may be confined to the pots or tubs for a number of years, a good fibrous loam, with a little bonemeal and enough sand to secure moderate porosity, should be selected. This plant is nearly hardy in a state of rest, but those which have made their growth under glass early in the year must not be exposed to spring frost or cold cutting winds, though after all danger of these unfavourable conditions are past the plants are best out of doors in a sheltered position until November.

To keep the plants to within given dimensions they should be pruned

every year immediately after flowering, and afterwards placed into a moist growing temperature so as to encourage a vigorous break, by which means abundance of bloom will be forthcoming the following spring.—J. H. W.

ROYAL BOTANIC SOCIETY.

APRIL 12TH.

THE spring show of this Society cannot be chronicled as other than a large trade exhibition, for there was only one competitor in the classes for professional gardeners and amateurs, and there was only one exhibitor in each of the classes open to all—a sorry state of affairs for this once flourishing Society. The trade exhibits were good, and made a good display.

Mr. G. Kelf, gardener to Mrs. Abbot, South Villa, Regent's Park, was the only exhibitor of twenty-four pots of Tulips with a good display. The best were Ophir d'Or, Vermilion Brilliant, Proserpine, Keizerskroon, White Pottebakker, and Joost Van Vondel. The same exhibitor was awarded first for a similar number of Hyacinths; the most conspicuous spikes were King of Blues, Etna, Grand Maître, Von Schiller, Chas. Dickens, and Mont Blanc. Mr. Kelf was the only exhibitor of *Azalea mollis*, staging six well-flowered plants, and was deservedly given first prize. The classes for twelve Hyacinths, twelve Tulips, and six table plants were simply a repetition of the others by the same exhibitor, who gained the same prizes. Mr. Kelf was the only exhibitor of a group of flowering and foliage plants, which was bright and effective. The majority of the subjects employed were bulbs, *Azaleas*, *Spiræas*, *Lily of the Valley*, *Azaleas*, and *Cinerarias*, grouped with *Palms*, *Caladiums*, and *A-paragus*.

Messrs. A. W. Young & Co., Stevenage, were the only exhibitors of twelve *Cinerarias*, and were awarded first prize. The same exhibitors were granted second prize for twelve *Polyanthus* with a moderate exhibit.

Messrs. B. S. Williams & Son, Upper Holloway, exhibited a group of Orchids, chiefly composed of *Vandas suavis*, s. *Gottschalk* variety, *tricolor superba* and *r. insignis*; *Cypripediums* *Boxalli nigrescens*, *Harrisianum superbum*, *giganteum* Williams' variety, and *Pit. herianum* Williams' variety; *Coelogyne Massangeana*, and *Dendrobium Pierardi*, all edged with Ferns, forming a very effective exhibit. Messrs. Wm. Paul & Son, Waltham Cross, staged a large collection of Tulips, which presented a very bright appearance. King of the Yellows, Ophir d'Or, Joost Van Vondel, Thos. Moore, Keizerskroon, Toreador, Queen of the Netherlands, Grace Darling, a colour difficult to describe, but reminds one of a shot silk; Golden Lion, Little Dorrit, and Jenny. Also some specimen plants of *Roses* *Enchantress* and *Perle d'Or* of the *Polyantha* section, a collection of spring flowering shrubs, *Cannas*, and *Camellias*, all growing in small pots, and well flowered.

Messrs. Hogg & Robertson, 22, Mary Street, Dublin, staged a collection of *Narcissi* and Tulips, about ninety varieties of *Narcissi* and forty varieties of Dutch and species of Tulips; considering the flowers had been cut since Monday, they were in excellent condition. The chief forms of *Narcissi* were Sir Watkin, Madame Klemp, Queen of Spain, Emperor, Golden Plover. The Tulips were very fine, and the most noteworthy were Thomas Moore, Californica, Grace Darling, Maes, Greigi, Eichleri, and *Chrysolora*. Messrs. Barr & Sons exhibited a capital display of *Narcissi* and *Muscari*. The most conspicuous forms were Mrs. Walter Ware, Maximus, Duke of Bedford, a giant form of *Empress*, *Horsefieldi*, Emperor, Wm. Goldring Leeds, Grand Duchess, Sir Watkin, *Triandrus albus*, M. J. Berkeley, Mad. de Graaf, Countess of Annesley. The St. George's Nursery Company, Hanwell, contributed a display of *Cyclamens*; the plants were well flowered, and the colours bright and diversified.

Messrs. Thos. S. Ware, Ltd., Tottenham, exhibited a collection of spring flowers, which comprised a collection of *Narcissi*, *Anemone pulsatilla*, *Trillium grandiflorum*, *Adonis vernalis*, *Spiræas*, *Lachenalias*, *Doronicums*, and *Primulas*. Messrs. Morle & Co., Finchley Road, exhibited a group of well grown pots of *Mignonette* of the well known market type. Messrs. John Laing & Sons, Forest Hill, contributed a display of flowering and foliage plants, consisting of *Palms*, *Dracænas*, *Crotons*, and Ferns, while the flowering section was made up of *Boronia*s, *Ericas*, *Clivias*, *Lilium longiflorum*, and a few Orchids. Messrs. Jas. Carter & Co., High Holborn, exhibited a collection of *Cinerarias*, both single and double; the flowers were large and vivid, in a wide range of colours. The double forms were dwarf in habit and of good size.

Mr. Wm. Rumsey, Joyning's Nursery, Waltham Cross, contributed a large display of cut *Roses*. The *Maréchal Niels* were a good colour, *Niphetos*, *Celine Forestier*. Mrs. Rumsey, L'Idéal, Ethel Brownlow, Gloire de Margottin, Madame Montet, Marie Van Houtte, and W. A. Richardson being very conspicuous. Messrs. J. Hill & Son, Edmonton, staged an exhibit of Ferns, the species of *Adiantums* with tinted foliage in baskets being very effective. The specimens of *Davallias* were also well developed, the whole forming a pleasing exhibit. Messrs. A. W. Young & Co. exhibited a group of *Clivias* and King of Denmark "*Geraniums*." Mr. S. Mortimer, Rowledge, Farnham, staged six boxes of *Tomatoes*, *Winter Beauty*, a seedling from *Conqueror*. The fruits were a good shape and excellent colour for the season; one box represented the bunches as grown, some carrying as many as seven ripe fruits. Two boxes of *Cucumber Sensation* were also staged by the same exhibitor.

HARDENBERGIA COMPTONIANA.

THIS hardwooded greenhouse climber makes one of the prettiest sights imaginable when well grown and flowered. It is an Australian plant, with glossy green ternate leaves. The flowers are produced during March and April. They are borne singly, or in groups of two or three, on wiry racemes 4 to 8 inches long. In colour they are violet, with two whitish blotches on the upper petal (fig. 71). It can be grown from seeds or cuttings. In the latter case half-ripened shoots should be used, 3 or 4 inches long. They ought to be inserted in sandy peat, and covered with a bell-glass until rooted. When large enough the young plants should be removed to a well drained border of peat and loam. An annual pruning must be given after flowering. When growth has recommenced water should be given liberally, with the maximum amount of air, until growth is completed in autumn. After this water should be given sparingly during winter. This, with plenty of fresh air on all suitable occasions, is all that is necessary to secure a good supply of flowers during spring.—W. D.



ROSE SHOW FIXTURES IN 1899.

- JUNE 14th (Wednesday).—York†.
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (N.R.S.).
 „ 28th (Wednesday).—Bath, Maidstone, and Croydon.
 „ 29th (Thursday).—Canterbury, Eltham, and Norwich.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Ealing and Hanley*.
 „ 6th (Thursday).—Co'chester (N.R.S.).
 „ 11th (Tuesday).—Hereford and Wolverhampton†.
 „ 13th (Thursday).—Brentwood and Helensburgh.
 „ 20th (Thursday).—Salterhebble.
 „ 25th (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSES IN POTS.

ANOTHER issue of the attractive, entertaining, and useful little book entitled "Observations on the Cultivation of Roses in Pots," by Mr. William Paul, F.L.S., V.M.H., has come to our notice. Nothing more commendatory of the excellence and acceptability of the work could be advanced than is conveyed in the two simple yet forcible words, "eighth edition." The guidance given in its pages has been of great service to both amateurs and gardeners in the past, and may be in the present and the future, for the teaching is based on the best of foundations—successful experience—and is concisely and clearly imparted by a master in the art of literary exposition.

GREENHOUSE ROSES.

To grow Roses well under glass they should be cultivated as climbers, planting them out in a prepared bed or border where the roots can extend, causing free and healthy growth of wood. The latter then requires to be well ripened in order that the buds may be well matured, then it is practically certain that a crop of flowers will be produced the following season. The best Roses for indoor culture as climbers are *Maréchal Niel*, *William Allen Richardson*, *Gloire de Dijon*, *Climbing Devonensis*, and *Lamarque*. These are Tea-scented and *Noisette* Roses.

When they grow well long shoots are produced, which must be reserved at nearly their full length for flowering, the unripened ends only needing to be pruned away. After the plants have flowered is the best time for the principal pruning, and this may be carried out somewhat boldly. In the case of *Maréchal Niel* the young shoots can be shortened to a foot. Some of the weaker growths may either be cut out entirely or pruned to a few buds. The other Roses mentioned can also be freely pruned after flowering, encouraging strong and vigorous shoots.

Good compost should be provided for Roses. There is nothing better than turfy loam of a yellow colour and holding character, mixing with it some decayed manure and bonemeal, with broken charcoal to insure porosity. See that the bed or border is efficiently drained, and that the compost is healthfully moist when planting. Syringe the plants freely that they may be kept clean and free from insects, and ventilate the structure carefully.—E. D. S.

NORTHERN SPY APPLE AND AMERICAN BLIGHT

THE MARIANNA STOCK.

I HAVE on several occasions seen this Apple recommended as a stock for Apples by growers in New Zealand and Australia, and now that the subject has come before us in the columns of the *Journal of Horticulture* (page 259, March 30th), a little discussion upon it may be useful.

To begin with, I do not quite follow the arguments of Mr. Palmer, that owing to the mildness of the New Zealand climate woolly aphis is rampant. I never knew this insect injured by frost, even when it stayed above ground; but it generally goes down into the soil at the approach of winter, and hibernates upon the roots of the trees until the spring weather induces it to crawl up again. I have dug up old orchard trees during severe winter weather, and left the roots covered with aphis exposed to the frost for several days, and then found them quite lively in the midday sun. If anyone knows of American blight being killed by frost, he will do us a favour by stating the fact in your *Journal*.

I think our climate is quite as favourable as any need be to the well being of the woolly aphis, and if it flourishes in New Zealand better than it does during dry, warm summers here, I pity the cultivator who tries to be rid of it. I do not think the attacks could be worse than some I saw in my journeys last autumn through the English counties. Of course it is possible that the insects may breed more continuously in the milder climate of New Zealand, but I think very possibly that our good friend the ladybird (*Coccinella bipunctata*) may be absent, in which case the cultivators should import some, as they undoubtedly help to keep the foe in check, though I do not think they will ever clear a plantation.

I fear I have rambled from the subject of the Northern Spy, but having returned thereto, I must say that I cannot bear out your statement, Mr. Editor, that it is usually free from the attacks of American blight. It is many years now since we grew it here, and one's memory is apt to be treacherous, but I asked my foreman this morning, and he said it used to be a brute for "bug." We planted some trees of "Northern Spy" for fruiting, and they got so infested that we destroyed them. Of course that was in the old days, when "bights" were looked upon as the act of Providence, and sprayers were not used. Perhaps other growers in this country will tell us their experience with Northern Spy and the woolly aphis—that is, if they have any of either on their premises.

The only Apple which I know that is proof against the woolly aphis or American blight (*Schizoneura lanigera*) is *Duchess of Oldenburg*; only once have I seen the woolly aphis on this variety, and then it was growing in close proximity to a tree which was so full of the pest that it had probably swarmed or emigrated to find room. Of course the aphis likes some varieties better than others, but I think all the varieties I know are liable to attack except *Duchess of Oldenburg*.

I know nothing of New Zealand personally, but it is a received fact that Northern Spy is aphis proof in that climate. What I would like to know is, does the same hold good in this climate? Now, Mr. Editor, you question the fact of a stock influencing the growth of any other variety so as to make it distasteful to the aphis; but surely we need not go to New Zealand to find this out, as all cultivators know that Apples upon the *Paradise* are almost exempt from attacks, whilst those upon *Crab* will suffer severely. I daresay that I ought not to know so much about woolly aphis, and to some I may seem to give myself away by writing upon such a subject, but I have waged war with the pest for fifteen years, and know something of its habits and likes.

THE MARIANNA STOCK FOR STONE FRUITS.

A word in conclusion about the *Marianna* stock. It came from America with a great character, but we have failed to appreciate it and after four years' trial have discarded it. I happen to know that other nurserymen have tried it, for our trees were packed along with others for other nurserymen; but then, the members of our cult are so busy and so bashful. If they would record their experiments they might prove almost as useful as a Government station, which our cousins across the water enjoy.—A. H. PEARSON, *Chilwell, Notts.*

[We are much obliged to Mr. Pearson for his communication. We agree with him on two points—1, the hardness of the woolly aphis; 2, that nurserymen could, if they were not so "busy and bashful," impart valuable information on stocks and other matters. We shall now begin to differ, and rather enjoy the opportunity than otherwise, in the anticipation of something good in return.

As our friend has presented his credentials—namely, having "waged war with the aphis pest for fifteen years" (without saying who or which was the victor) it will be courteous if we present ours.

Our attack on the enemy commenced in 1846, and for three months we engaged from morning till night in, what was vainly supposed,

painting the pest out of existence. Twenty-foot stems of grand old espalier Apple trees such as are rarely seen nowadays were almost as if encased with wool. No doubt a few millions of the horrid insects were slaughtered by the mixtures, too nauseous to be named, but millions more burst out again, and nothing approaching annihilation was observable till they were treated with spirits of tar—an obsolete article for the purpose now.

The trees were on the Crab, and the younger warrior may be saying to himself, "Yes, of course, if on the Paradise they would have been almost exempt from attack." But let our able critic wait for the end—it only means a bridge of fifty-two years—and he will learn that there are exceptions to his comforting dictum, and that "all" cultivators do not accept it as unimpeachable.

their swarming foes, so the whole were burned together last December, or rather, all the trees save one; and, mark the fact, Mr. Pearson, this is on the Crab stock, of the same age as the others and planted at the same time. This tree that ought to have been the worst, according to "fifteen years' experience," was never attacked so severely as the others, and as it supports a fruiting bush of Mistletoe, its life was spared. It was not the Northern Spy, to which the pen is travelling.

But before referring to that "blight proof" variety let no one draw the inference from what has been said that we regard trees on the Paradise as more prone to infestation by the aphid in question than those on Crab stocks. We do not suggest anything of the kind. We simply consider the comparative immunity of the "Mistletoe tree" is

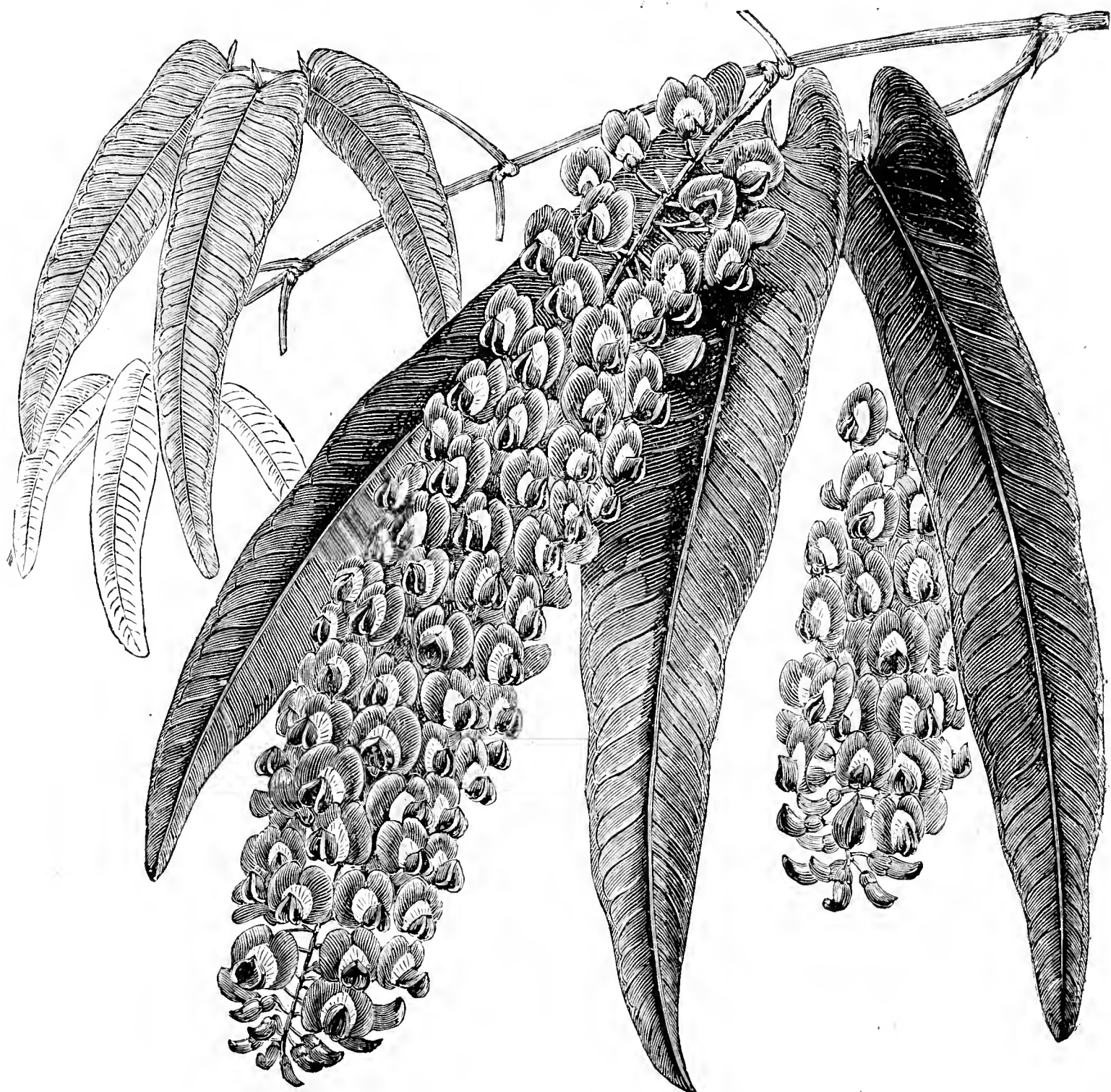


FIG. 71.—HARDENBERGIA COMPTONIANA.

Some years ago we planted a number of cordon Apples to cover a fence, one each of several dessert varieties, for ascertaining those most suitable for London suburban gardens. They were on the Paradise stock—at least all but one (on the Crab)—and included Duchess of Oldenburg—the alleged "woolly aphid proof" variety.

The trees were apparently clean when planted, and for a year or two afterwards. Then came the enemy. It was swept off time after time with either petroleum (in winter only), a strong solution of Gishurst, or methylated spirit, these destroying the pest in summer without injuring the trees. But it came again. After another similar battle, victory, and re-invasion, and observing no Apple trees in adjacent gardens, it was resolved to let the enemy choose its varieties and "do its worst."

It had a happy time for three years, but after killing the Margil and Cox's, and nearly finishing all the rest, including the "blight-proof" Duchess of Oldenburg (which was as white as a miller) it was thought the time had come to end the war between the trees and

due to the fact that it is a standard, with its head above the fence and exposed to all the winds that blow, while those on the Paradise that were "eaten up" by the enemy were secured to the fence and completely sheltered from the east and to a large extent from the north. This is quite sufficient to account for the difference, for, though aphid lanigera is not killed even by severe frost in winter, it rejoices in warmth in summer, and the hotter and drier the positions the greater is its rate of increase.

Whatever may be the case in open nurseries, and we readily concede that Mr. Pearson has watched the trees and their enemies there more closely than we have, as to those on the Paradise being more resistant of aphides of different forms than those on the Crab or on the free stock (which are not quite the same) we know, and have known for more than twice fifteen years, that it grown in an enclosed garden or sheltered orchard where the pest is established, trees on both stocks are liable to be infested, though not all varieties are attacked with equal persistency.

We have had trees from Chilwell both on the Paradise and Crab stock as clean and as good as we could desire to plant, but in time the enemy, lurking in established trees, took its flight to the new comers, both in orchard and garden, those the most exposed being the least infested. Reasonable shelter is good for Apple and other hardy fruit trees, but too much of it is favourable to their enemies.

In the R.H.S. gardens at Chiswick, which are almost surrounded by buildings, insects would have a happy hunting ground but for the repressive measures frequently employed. There are many varieties of Apples established on the Paradise, and several on the Crab, which, if left alone, would soon be white with the aphid in question, including the Duchess of Oldenburg, though it may not be so tempting to the pests as some others. Trees more or less weakened by bearing, or weak growers generally, seem to be attacked, as a rule, with greater determination there, or anywhere, than are the more vigorous growers.

It is doubtful if there is an Apple tree at Chiswick, no matter on what stock or of what variety, in a bearing state that would not fall a prey to the destructive pest in question if it were allowed to run its course for a couple of years. Or rather not one, except one, and that is the Northern Spy. This is never attacked. It is a standard in a bearing state (but a shy bearer). A standard of a different variety almost touching it is attacked so persistently that it had to be dressed four or five times last year, the Spy not once. It needs no insecticides, and receives none. It may be added that the American blight destroyer used there is carbolic softsoap dissolved at the rate of 4 ozs. to a gallon of water.

Mr. Pearson should see the tree for himself. It affords better evidence of its insect-resisting power than a "treacherous" memory convinces to the contrary. He admits, however, that his foreman excels him in memory—a great compliment to the foreman. Let it be said there are Apples grown under the name of Northern Spy that are not true. We have seen a few trees correct, and these were clean, but we have never yet seen a tree bear what we should call a good half crop of fruit, and we should never plant the variety for profit.

We should like our friend to raise a few stocks from the Chiswick tree, and establish some varieties that are "brutes for bug" upon them. If he should find the results equal to those in New Zealand, and show the way in starving out the woolly aphid, he would be a public benefactor, and immortalise the fine old nursery name he bears. The whole subject of his letter is important, and we have given it some attention. What will be the outcome of the venture no one knows. We can only tremblingly await results.]

FAULTS, FALLACIES, FAILURES IN FRUIT CULTURE.

DURING the past seven years I have delivered upwards of a thousand lectures in the Midlands. On three or four occasions only certain local secretaries, fond of doing things with a flourish, have announced me on the bills as "Professor." The mistake was so trivial, and of such rare occurrence, that when it came under notice it was passed over with a smile, as it might well have been by my critic. As to posing under that or any designation to which one has no right, the idea is too preposterous to be entertained for one moment, and Mr. Pearson has certainly strained a point in saying that I am so announced in Derbyshire.

It was no flight of fancy on my part about trees from the South not answering in the Midlands. The query has been put to me often enough, yet it is quite possible that Mr. Pearson has not heard of the doubt—quite as possible as the fact of his not having heard of the use of 100 tons of dung per acre before reading my article. Apart from the fact of that quantity having been used by the owner of one of the largest nurseries in this country, the important point which I was anxious to enforce is the folly of planting trees in poor soil. By far too little attention is given to this matter, and I shall indeed be well repaid if my article should induce the avoidance of line and rule, taking a more intelligent grasp of what goes to render such work successful, and the treatment of each case—soil and trees—upon its merits.

The statement that I rarely fail in my lectures to point out that trees from the South are the only ones worth having is decidedly erroneous. My advice after, or before, not in lectures, to those who require trees, is to go to nurserymen with whom fruit is a speciality. I am bound to do this, from the abominable rubbish so frequently foisted upon those who are ignorant of what is a healthy planting tree or bush. Mr. Pearson may be surprised to learn that I have sent customers to him for fruit trees; he may be still more surprised to hear that I have a goodly number of trees from the Chilwell Nurseries in my hands at the present time, many of them are pyramids, and capital trees they are too, well furnished with plenty of stout bottom growth, healthy, symmetrical, vigorous, and quite certain to become valuable fruiting trees. These are not in the County Council fruit plots, but are under my control.—EDWARD LUCKHURST.

ARTIFICIAL MANURES IN THE GARDEN.

[By Mr. A. D. Hall, and taken from the Journal of the Royal Horticultural Society.]

THE use of artificial manures in gardens is rapidly increasing, if one may judge from the number of advertisements, and the new firms that are taking to the business; and the object of the present paper is to discuss the principles that should regulate their effective and economical employment. It may of course be argued that of all places artificial manures are least wanted in a garden, inasmuch as practically perfect fruit and vegetables are grown by good cultivation with dung alone. The only question is whether the same results cannot be obtained more economically by the assistance of artificial manures, which, again, can be used to meet certain special difficulties of soil and situation in a manner that would otherwise be impossible. It must not be forgotten that artificial manures are powerful tools by which the development of the plant may be shaped by the gardener along certain directions; but, like all powerful tools, they require to be used with knowledge and discretion, or they will do as much harm as they can be made to do good.

VALUATION OF MANURES.

To learn the composition of the simple manures the gardener should refer to some book, as, for example, to Mr. Cousins' little book on the "Chemistry of the Garden," where also he will find an explanation of the proper method of arriving at the value of a manure. As to the latter an approximate way of arriving at the value of a ton of a given manure is to allow 10s. or 11s. for each per cent. of nitrogen, 1s. 3d. or 1s. 6d. for each per cent. of phosphate, or 2s. if the phosphate is soluble, and 4s. for each per cent. of potash. As an example, a manure containing 6.5 per cent. of nitrogen, 22 per cent. of phosphate, and 4 per cent. of potash is worth about £6 a ton, made up as follows: 6.5 at 11s. = 71s. 6d., 22 at 1s. 6d. = 33s., 4 at 4s. = 16s., total 120s. 6d., to which must be added a certain percentage if the manure is bought to small lots. With this preliminary knowledge of the nature and price of artificial manures, it remains to consider the specific effect of the three constituents—nitrogen, phosphoric acid, and potash—which singly, or in combination, are the essence of every manure.

EFFECTS OF MANURES.

Speaking generally, the nitrogenous manures promote growth and the vegetative development of the plant, leaf, and shoot, rather than flowers and fruit. For example, a fruit tree overdressed with nitrogen will run to wood, the leafage will be extensive and very green, the shoots will be long-jointed and soft, the buds will be wood and not fruit buds, the development of fruit will be displaced in favour of continued growth.

Of course for some vegetables it may be an advantage to promote this excessive vegetative development by the use of nitrogen, particularly in early spring, when the plant naturally finds a difficulty in obtaining supplies of nitrogen from the soil. For early crops of Cabbages, Lettuces, Peas, &c., top-dressings of nitrate of soda are a great help to rapid growth and its natural accompaniment of tenderness. Nitrogenous manures differ much in their rapidity of action; two of them, sulphate of ammonia, and especially nitrate of soda, are both extremely concentrated and immediately active; they should only be applied when the plant is growing, and several times in small quantities rather than in one application. Of course they are only partial manures, supplying but one element of plant food, and must not be used unless the land is well stocked from other sources with phosphates and potash, or else their continued application will result in the impoverishment of the soil. But in their place, and used with discretion, they are among the most powerful agents the gardener possesses.

It is, however, among the phosphates that the gardener will find his most useful manures. Speaking generally, a garden receives lavish supplies of dung, on the whole a nitrogenous manure, and is somewhat over-rich on this side, if we may judge at least from the prevalence of wood and unfruitful growth among the fruit trees of so many gardens. It is in such places, the ordinary garden which has long been receiving dung, that phosphates and little artificial manure besides, are wanted to promote a better development of flower and fruit.

Phosphates are intimately connected with the various phenomena of reproduction, which we may sum up as the maturity of the plant. Above all they are required to balance and bring to a term the growth induced by free supplies of nitrogen.

Of these bodies nothing is better for general garden use than one of the bone phosphates, bonemeal (or, better still, steamed bonemeal, as being a finer and more soluble powder), or again one of the cheap phosphatic guanos.

Basic slag is a most excellent phosphatic manure for stiff soils. It is best dug in at the rate of 6 lbs. or 8 lbs. per square rod when the land is trenched. Superphosphate is the most active of the manures

of this type, but should only be used when the soil contains naturally a fair supply of lime, on the loams and chalky soils rather than on sands or gravels or the cold clays. One or other of the manures is all but indispensable in a garden. With a supply of steamed boneflour or phosphatic guano and dung a gardener need trouble himself but little about other fertilisers.

About the effect of potash, the third of our elements of fertility, little positive is known; but in a general way it may be said that where dung is at all regularly used little is required in the way of specific potash dressings. But where dung is not employed, or where the soil is of a light sandy nature and likely to be deficient in potash, it will be necessary to apply kainit at the rate of 4 lbs. or 5 lbs. per square rod every second or third year, preferably putting it on in the winter or late autumn.

In some orchards and gardens dung cannot be obtained. In such cases it is necessary to obtain as a basis for the manuring some slowly acting nitrogenous body of an organic origin, such as meatmeal, fish guano, or rape dust, digging this into the ground at the rate of 8 lbs. to 12 lbs. per square rod in the winter. With it should go 4 lbs. to 6 lbs. per square rod of a phosphatic manure like steamed boneflour or phosphatic guano, and kainit every other year or so. Finally, as the plants are beginning to grow a little active nitrogen in the shape of sulphate of ammonia or nitrate of soda may be used along with superphosphate. The gardener working without dung should lose no opportunity of taking catch crops of Mustard or Vetches, and digging them into the soil. The land may be brought into splendid condition by heavily manuring with artificials for a crop of this sort, and turning it in a month or two before the ground is wanted again.

THE USE OF ARTIFICIAL MANURES.

A few general directions may be given for the use of artificial manures. The best returns are obtained by applying them to growing, rather than established, plants. I have seen recently planted Strawberries enormously benefited by a dressing of artificial manures that produced no sensible effect on two or three year old plants alongside. As to quantities, 1 oz. per square yard, or 2 lbs. per square rod, is equal to about 3 cwts. per acre. This may be taken as an outside quantity to use of the rich and active nitrogenous manures like sulphate of ammonia or nitrate of soda; of more slowly acting manures like the guanos, two or three times the quantity may be used.

For plants in pots it is better to use manures in solution—for example, nitrate of soda and superphosphate, or 1 oz. of sulphate of ammonia and 3 cws. of superphosphate dissolved in 10 gallons of water makes an excellent liquid manure for finishing, when buds are opening or fruit is swelling. If a compost is to be enriched, let the slowly acting forms of nitrogen, like the guanos or meat meal, be used with phosphates to correspond, and let the manure be mixed with the soil some time before the compost is wanted, for the early stages of the decomposition in the soil of these manures are injurious to tender rootlets.

PLANT ASH FALLACIES.

As to the nature of the manure required for this or that crop little can be said; the gardener has not at his service the knowledge that the farmer possesses of the specific requirements of his crops; it is only for the farm crops that systematic trials have been carried out, like the fifty-year-old experiments at Rothamsted, and the many other stations that have grown up in England and elsewhere. From these experiments and their extension by the practical experience of many years we now know with a reasonable degree of accuracy the specific requirements of each crop on the farm, whether its manure should be mainly nitrogenous or mainly phosphatic, whether potash is wanted or no: whereas we have nothing but general grounds upon which to distinguish between the requirements of a Cabbage or an Apple tree, an Onion or a Rose. It is little use analysing the plant to get this information: the proportions of nitrogen, phosphoric acid, and potash in a plant are not the proportions in which these substances should be supplied in order to best feed the plant. What is present in the smallest proportions is often the particular substance the plant most wants; it is only present in small proportions because the plant finds a special difficulty in getting it from the soil. As an instance of this common fallacy of supposing the composition of a plant's ash gives any guide to its manuring, Swedes may be taken: 1 acre of average Swedes removes from the soil 98 lbs. of nitrogen, 33 lbs. of phosphoric acid, and 149 lbs. of potash. This material would be contained in 5½ cwts. of nitrate of soda, 2½ cwts. of superphosphate, and 11 cwts. of kainit; yet the ordinary manure for Swedes, one tested by many years of experience and scores of experiments, is something like 4 cwts. of superphosphate and 1 cwt. of nitrate of soda per acre.

EXPERIMENTS.

Only actual experiments can teach us the requirements of our garden crops, and experiments of a systematic sort are few in number. We shall have in time results from the Experimental

Fruit Farm the Duke of Bedford has started at Woburn; in a commercial way we have the trials conducted by Dr. Bernard Dyer at Hadlow for the Permanent Nitrate Committee, but as yet these and other trials are young, and have not reached permanent conclusions. Meanwhile every gardener should have a little experimental plot in his own garden; he will learn much about his crops, and he will learn what no one else can teach him—i.e., the special characteristics of the soil he is working on. Such a plot costs but little trouble and becomes more valuable every year. An arrangement like the following gives perhaps the readiest information—seven plots side by side, each 1 square rod in extent:—

Plot 1, Gets no manure.

Plot 2, Gets an all-round manure. A pound of sulphate of ammonia as a top-dressing, 4 lbs. superphosphate or basic slag, according to the soil, and 2 lbs. kainit.

Plot 3, Gets an excess of nitrogen, using 3 lbs. of sulphate of ammonia instead of 1 lb., as in the previous dressing.

Plot 4, Gets no phosphate—the dressing of plot 2 without the phosphate.

Plot 5, Gets an excess of phosphate, the dressing of plot 2, with 12 lbs. of phosphate instead of 4 lbs.

Plot 6, Gets no potash, the dressing of plot 2 without the potash.

Plot 7, Gets excess of potash—the dressing of plot 2, with 6 lbs. of kainit instead of 2 lbs.

On some soils it may be well to try an eighth plot with ¼ lb. of sulphate of iron added to the dressing of plot 2.

If only a number of gardeners would put down a little trial ground of this kind, growing various crops upon it from year to year, and reporting their results to the Royal Horticultural Society, we should not long remain in our present ignorance of the specific needs of our garden plants. This paper has been confined to its particular subject—the use of artificial manures in a garden—nothing has been said about cultivation, the foundation of all gardening; nothing about dung, which may be regarded as the basis of all manuring; nothing about the use of lime: these are all points that cannot be neglected. No artificial manure will make up for slovenly cultivation, rather they demand greater care in this direction; but the object of the paper has been to indicate and explain the fact that artificial manures give additional scope to the gardener's art, and that in the hands of a skilful man they may be used to still further combat the difficulties that arise from soil or climate.

[Some time ago, during a discussion on analysis and manuring in our columns, the paper of Mr. A. D. Hall, the accomplished Principal of the South-Eastern Agricultural College at Wye, was frequently referred to. We were, in consequence, desired by some of our readers to publish Mr. Hall's paper. This we could not do at the time, but we take the substance of it now from the recently issued R.H.S. Journal, and an attractive and interesting issue it is.]

It will be observed that Mr. Hall states, "It is of little use analysing a plant to get to know its exact requirements, for what is present in the smallest proportions is often the particular substance the plant most wants, and could not obtain in larger quantity because not in the soil." Superficial so-called scientists may do worse than ponder over that pronouncement.

As to "experiments," we are disposed to think that those conducted as suggested, though interesting and instructive to the individual conductors, are not calculated to be of such general service as is indicated. In Mr. Gordon's able and comprehensive paper in the same issue of the R.H.S. Journal, he says: "When trials of manure are made, care should be taken to select land of uniform quality, for when, as sometimes happens, the experiments are conducted on lands that were cropped and manured in several different ways in the previous year, the results are, if not actually misleading, of no practical value." We should like to know what Mr. Hall thinks of that aspect of the case, which does not appear to be treated in his admirable paper.

Instead of a number of gardeners experimenting with manures on such soils as they happen to have, without definite knowledge of their manurial contents, and reporting to the R.H.S., we cannot help thinking it would be better for the R.H.S. to conduct its own experiments on a strictly scientific basis.

Though Mr. Gordon has made a strong point in the sentence above cited, it is materially discounted in his proposition that the results of County Council experiments on allotments should be reported to the R.H.S. for collation. Divergencies in soil constituents are greater on allotments than almost anywhere; the small experiments in question are conducted for the information of the allottees in the respective centres, and are of little use, because of soil variations, to outsiders. This is in accordance with Mr. Hall's proposition that if a gardener has a well conducted experimental plot "he will learn what no one else can teach him." Is not the converse of this, "and what he cannot teach anyone else who works under fundamentally different soil conditions?"

PROGRESS IN FRUIT PRODUCTION.

UNDER this heading another of the series of papers by Mr. W. E. Bear on "Flower and Fruit Farming in England" appears in the last issue of the *Journal of the Royal Agricultural Society*.^{*} The author is evidently endowed with great mental and physical activity, for he appears to have been almost everywhere and seen almost everything in most of the chief fruit growing districts in this country. Added to undoubtedly keen powers of observation he has, without doubt, another faculty highly developed—namely, that of extracting information bearing on the subject of his quest. Coupled with these qualifications is that of a facile pen, and consequently the narrative of what he has seen and heard during his wanderings is both interesting and suggestive, while it can scarcely fail to be instructive and helpful to possessors of land who desire to devote a portion of it to the cultivation of fruit, but who have little acquaintance with the subject. Though an expert agriculturist, he is a deep lover of and anxious learner in the domain of gardening, and that is, no doubt, why he asked so many questions, some of which might not have occurred to an experienced practitioner, and his voluminous report (from which we take a few extracts) will be of the greater service to the community to which it appeals.

INACCURACIES IN FRUIT ACREAGE.

On this subject we find stated: "The area under orchards in Great Britain was first given in the Agricultural Returns in 1871, when it was far from being accurate, as mentioned in the returns of the following year. As one proof of inaccuracy, it may be remarked that 23,033 acres were returned as the area of orchards in Wales in 1871. This area was reduced to 10,680 acres in 1872, and still it was far too large, as it was brought down to 3052 acres in the following year, though without a word of explanation. Probably the extent of orchards in Wales was still over-rated in 1873, as in 1878 it was returned as only 2646 acres."

Then passing over several years to the period of revival, Mr. Bear continues:—"Tabulated statements show that the totals for England and Wales have nearly doubled in the ten years that have elapsed since 1883; and probably, in reality, they have more than doubled, for corrections made in 1897 considerably reduced the small fruit area, while a slight further reduction was made in 1898, and it may be assumed that the errors in measurements then detected prevailed when the earliest return was made. In 1896 the totals were put at 69,610 acres for England, 1275 for Wales, and 5360 for Scotland, making 76,245 acres for Great Britain; while those for 1897 were 63,535 acres for England, 1043 for Wales, 5214 for Scotland, and 69,792 for Great Britain. Thus the reductions were 6075 acres for England, 232 for Wales, 146 for Scotland, and 6453 for Great Britain. The figures for 1898, as given in the table, show an apparent contraction. The number of new plantations seen in all the districts I have visited has given me a confident opinion to the effect that there has been a considerable expansion of small fruit since 1896, instead of a contraction;" and so say all of us.

AROUND LONDON.

Mr. Bear then deals with fruit growing in various districts. As an example of open air culture within fifteen miles of Charing Cross, he says:—

"Where there is scope new plantations of top and bottom fruit, or trees with flowers as bottom crops, are to be seen. One of the best of these—and no better one was inspected by me anywhere—is that belonging to Mr. Walker of Ham Common, near Richmond, the first in the Thames Valley to be visited. In addition to a considerable acreage of flowers and vegetables, Mr. Walker has 35 acres of fruit, about half Apples, one-fourth Plums, and the remaining fourth Pears. Gooseberries and Currants are grown to some extent as bottom crops, but chiefly in the rows of trees, Narcissi and Pæonies occupying most of the spaces between the rows. No Damsons, Raspberries, or Strawberries are grown. The soil is sandy; but, with the liberal treatment practised by the occupier, most varieties of fruit flourish in it admirably.

MR. WALKER'S VARIETIES.

"The principal varieties of cooking Apples, early sorts being placed first, are Lord Grosvenor, Grenadier, New Hawthornden, Stirling Castle, Bismarck, Duchess of Oldenburg (also valuable as a dessert Apple), Lane's Prince Albert and Wellington. One of the most popular Apples among market growers in some districts, and especially upon heavy soils, Bramley's Seedling, does not flourish well in the sandy soil of Ham Common; while Peasgood's Nonesuch, one of the finest and the most handsome of all cooking Apples, is not to be compared as a cropper, in Mr. Walker's opinion, with such varieties as Lord Grosvenor, Lane's Prince Albert, and Bismarck. Duchess of Oldenburg and Stirling Castle are also great croppers at Ham Common. The principal dessert Apples, in addition to the Duchess of Oldenburg, are Quarrenden, Peter the Great (otherwise

Cardinal), Worcester Pearmain, Benoni, King of the Pippins, Cox's Orange Pippin, and Yellow Ingestrie. The chief Pears are Clapp's Favourite, Williams' Bon Chrétien, Fertility, Louise Bonne of Jersey, Marie Louise d'Uccle, and Emile d'Heyst. Fertility is the variety most extensively produced, as it is a great cropper, and it comes in just after the common Hesse, which is the variety grown on the largest scale in nearly all metropolitan market orchards. Fertility is superior to Hesse, and makes a better price. Very few late Pears are grown, as Mr. Walker does not store fruit, but sends all to market as soon as it is picked. The Plums most extensively grown are Rivers' Early Prolific, Czar, Victoria, Pond's Seedling, and Monarch. The variety named first, a wonderful cropper in most parts of the country, does not yield as well as some other kinds at Ham Common, and this is also the case with Prince of Wales.

PLANTING DISTANCES AND STOCKS.

"In one great lot of Apples in the bush form on Paradise stock, planted eleven years previous to last autumn, 10 feet by 9 feet apart, it has become necessary to take out every other tree—a lamentable but necessary sacrifice of trees now in full profit. Similarly, in the case of a well-grown and perfectly healthy lot of 400 Cox's Orange Pippins (there are 200 in another place), planted six years previous to last autumn, when three years from the budding, 13 feet by 10 feet apart, every other tree is now being reduced in size by trimming, and in a few years will have to be dug up. Again, a magnificent lot of 400 Duchess of Oldenburg Apples on the Paradise stock, planted five years ago, when three years from the budding, 13 feet by 10 feet apart, are already too thick, and would have been better planted 13 feet by 13 feet. As to the distances of Plums, a lot of 400 of the Czar variety, 16 feet by 10 feet apart, and now about ten years old from the time of planting, are quite thick enough. It is a question of somewhat difficult calculation to decide whether fruit trees should be planted closely or comparatively widely. In the former case there will be some years of extra production before half the trees have to be thrown away. But where bottom fruit is grown, the balance of advantage appears to lie in planting standard Apples on the Crab or Pears on the Pear stock, 24 feet to 30 feet apart, with dwarf Apples or Pears or Plums at half distances, so that no uprooting will be necessary for about twenty years, after which the standards will cover the ground."

IN MIDDLESEX.

As a good example of the old fruit plantations of the Thames Valley, that held by Mr. Poupart of Twickenham was visited. The nursery is about 160 acres in extent, between 50 and 60 acres being devoted to fruit, and the rest to vegetables and flowers. The rows of fruit trees (mixed Plums, Apples, and Pears) are 16 feet to 18 feet apart, and the trees in the rows about 12 feet from each other. A few Cherries and a fair quantity of outdoor wall fruit are grown, but no Strawberries. Mr. Poupart sells his own produce in Covent Garden, and thus is able to make the most of it. But he does not agree with growers who think that the salesmen's usual charge of 10 per cent. on the returns is too high. On the contrary, he believes that it hardly pays, allowing for market charges and the cost of providing packages. Old orchards in the Twickenham district let at £8 to £8 10s. an acre, and land sells up to £1000 an acre, or even more in some places; but it was surprising to learn that fruit plantations in Cranford, twelve miles from Covent Garden, let in some cases for rents as high as £10 to £12 an acre, or from 25 to 50 per cent. more than the usual rents of orchards in parishes very much more populous and nearer to London.

(To be continued.)

THE GARDENERS' ORPHAN FUND.

ASSUMING that your correspondents, "S., Yorks," and "A Country Gardener," page 257, fairly represent the views of non-subscriber gardeners in relation to their objections to subscribe to the Orphan Fund, and if so, I hope the special objection put forward is a thoroughly honest one, then does it merit full attention. But all the same let it be remembered that the Orphan Fund was in existence several years before the then Secretary was granted the salary stated, and it is fair to ask how many or how few country gardeners then did subscribe; certainly they had not then this peg on which to hang an objection.

I am not at all surprised that the primary objection is the one raised, because I have heard it mentioned privately in many directions. Still it needs a good deal of courage to avow it openly, especially if the objectors did not subscribe to the Fund prior to the increase in the salary. But I would point out that, after all, the real increase was not 100 guineas, but only about 50 guineas. I remember that at the time the then Secretary elected to become a paid official, that a sum of some £50 was allowed for office expenses, the Committee practically recognising the right of the Secretary to have some compensation for the use of his house as the Fund offices. Now that the salary of 100 guineas includes the 50 guineas formerly accorded for that purpose and clerical assistance, the present Secretary has to use a portion of his London office and pay for clerical help out of the 100 guineas salary, so that his actual pecuniary recompense cannot be more than 50 guineas per annum, a fact which should be clearly understood.—A. D.

* London: John Murray, Albemarle Street.

ERICAS AND THEIR CULTURE.

GARDENERS of the past generation might well pride themselves upon their splendid achievements in connection with the culture of the many beautiful species and varieties of *Ericas*. In those days there was not so great a demand for large quantities of cut flowers, and the "rush" of the present time was not quite so pronounced, cultivators had time to study the requirements of their pet plants, time to think before they watered their giant specimens, with the result that fewer mistakes were made in watering than are apparent to-day. Fortunately, however, we have yet among us a few cultivators to whom the art of Heath-growing is not lost, but the time has come when it is necessary for a brigade of younger hands to glean from the older ones the secrets of success in this branch of gardening, then with further experience we may confidently anticipate that should *Erica* growing again become popular an army of experts may quickly be ready to take the field.

Although *Ericas* are little grown in private gardens, it is satisfactory to find that market growers are able to produce vast quantities of grand plants in 5 and 6-inch pots suitable for decorative purposes. They have evidently not lost the art of growing them to perfection in a small state, and it shows too that we live in an age when specialists are more than ever "men of mark." Let us hope that the rising generation of gardeners will grasp the opportunities of paying special attention to *Erica* culture without neglecting to acquire a sound general knowledge of their calling.

Those who contemplate making a start in growing these useful plants will do well to confine their attention for a time to the softer-wooded kinds, such as *hyemalis*, *gracilis*, *g. autumnalis*, *Wilmoreana*, and *ventricosa coccinea*, as they grow more quickly, and are not so difficult to manage as the harder-wooded ones, and after they have mastered the details of growing the former, enter with zest into the culture of the many fine varieties of *E. Aitoniana*, which include such beautiful ones as *Turnbulli* and *Barnesi*. *Austiniana*, *Cavendishiana*, *depressa*, *Devoniana*, *eximia*, *Fairriana*, *Irbyana*, and *Marnockiana*, are a few of the best among other species. The variety *propendens* (fig. 72) which recently received a first-class certificate from the Royal Horticultural Society when shown by Messrs. J. Veitch & Sons, Ltd., Chelsea, is very charming with its bright mauve flowers.

At this season plants can be obtained in small pots, which are just ready for a shift into 5-inch. During the afternoon preceeding the day on which the potting is to be done, examine the plants carefully, and water such as require it; they will then be in the right condition for potting next day, and the operator will be able to judge with a greater amount of certainty when water is again required. An inch of drainage will suffice for 5-inch pots, this to be formed of one large crock placed at the bottom and covered with pieces ranging in size from a marble to a pea. Good brown fibrous peat is a necessity; this should be pulled to pieces with the hands, and have a fourth of sharp sand added. Place some of the rougher portion of peat over the drainage, ram thoroughly, and fix the young plant in position so as to have the surface of the ball half an inch below the rim of the pot. This will allow a very thin layer of soil to be placed over the ball, and yet leave room in the pot for holding water. Be careful not to bury the stem, as deep potting has been fatal to many a hard-wooded plant.

On the other hand, do not let the centre of the old ball stand so high in the pot that water drains quickly from it to the sides, because it is then most difficult to effectually moisten the whole ball without plunging in water. Special potting sticks should be made which will fit easily into the cavity left for soil, and reach quite down to the drainage. A golden rule to observe in potting *Ericas* is always to add the soil in thin layers, press each layer well home, and make it very firm before adding another, finishing the surface by pressing as firmly as possible with the fingers or thumb. After potting place the plants in a cool house, shade from bright sunshine, and keep the front ventilators closed for a time if cold winds prevail. Damping between the pots may also be practised during dry bright weather.

About the end of May transfer the plants to cold pits, and give abundance of air, and after a time remove the lights altogether when the weather is fine. If pit room is scarce, stand the plants on a well ashed bottom in an open position, and plunge the pots to half their depth in ashes. The majority of the fine softer wooded kinds which find their way to the markets are grown on this open air system during the summer. The practice insures hard, well ripened wood and flowers in abundance.

About the middle of September place the plants under glass, in a light structure, where they can receive abundance of air on all favourable occasions throughout the winter. Give as little fire heat as possible, just enough to keep out frost; if the temperature of the house never falls below 35° no harm will result.

The harder wooded kinds of *Ericas* rarely require pruning, but the free growing ones, such as *hyemalis*, should be pruned soon after they have done flowering. Cut back the strong shoots to within an inch

or two of their base, remove the points of weaker ones, so as to give symmetry to the plants, and if the weak shoots appear crowded remove some of them entirely. I have sometimes found it beneficial to syringe the plants lightly at noon during bright weather when they are making their growth, but the practice is one which demands the exercise of judgment, or mildew will make its appearance; as soon as traces of it are visible dust the plants with sulphur, or syringe with an insecticide specially prepared.

For the production of large specimens, the healthiest and most vigorous young plants should be selected, and these must never be allowed to become root-bound until they have been placed into the largest sized pots, in which they are to be flowered. The most suitable season for potting the

majority of *Ericas* is in spring, just as young growth commences; but as many species make their growth in the summer, potting in their case should be deferred till then—in fact, each plant should be treated individually, and whatever the season, excepting late autumn and midwinter, any plant having reached that stage at which it requires more root room should be potted. As a rule, pots two sizes larger than those the plants occupy are suitable ones to use when repotting. The larger the pot the more care must be exercised in draining. A good system to follow is to place a layer of large hollow potsherds at the bottom, cover these with a layer broken moderately small, and finish off with small pieces of equal size—these allow the surplus water to pass away freely and evenly, instead of being drawn to certain points, as is the case when large crocks are placed upon the surface of the drainage.

The soil for large plants must be used in a rough state; however carefully prepared, a certain amount of fine soil always comes to hand as the work of potting proceeds; this should be placed on one side for other purposes, because, if used, it would soon become sour, and we have to bear in mind that in the production of large plants the soil employed at the early pottings must be kept sweet and tough

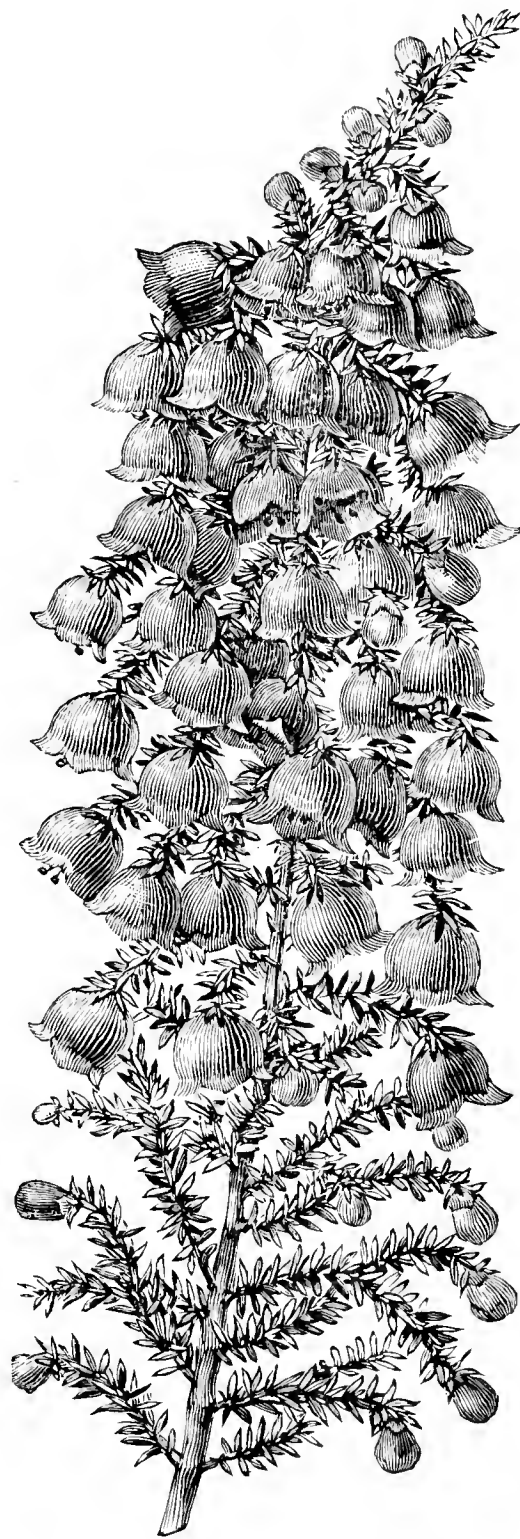


FIG. 72.—*ERICA PROPENDENS*

for years, if the plants are to succeed. The remarks about firm potting previously given in connection with young plants must be strictly observed when dealing with large ones, and as the work proceeds, lumps of charcoal, ranging in size from a marble to a walnut, should be introduced at intervals, for they help to keep the soil sweet, and quickly become impregnated with plant food, which is given up slowly as the roots need it. Charcoal, being practically indestructible, is of immense benefit in the culture of all large specimen plants.

Plants of small and moderate size may, with advantage, be placed in the open air during July and August, as the practice insures well ripened wood, and the abundance of fresh air circulating among them seems to have a similar effect upon them as a seaside holiday does to a human individual who lives most of the year inland—viz., it sets them up for the winter. But let us return to the plants. It is not advisable to place very large specimens in the open air, as heavy rains might ruin them, and would certainly render the work of watering a most difficult one.

Before concluding I must advance a few remarks on watering large specimens; it is an art in which proficiency can only be attained by years of experience and careful observation, and even with good training in these respects it is not everyone who can master the business, as it is necessary at the outset to be well equipped with good perceptive faculties and reasoning powers. The appearance of the surface soil and the ring of the pot do not guide us much; we must, so to speak, be able to see, or to think, through the whole mass of soil, to ascertain the exact time when water is required. When it is, give it freely, again and again till there is no doubt about every particle of soil being thoroughly moistened. Whenever there is a doubt as to whether water is required or not leave the plant for an hour, then examine it again till a decided opinion is formed; a good grower learns to decide by the appearance of the growth if water is required when other tests fail him. To water a day before it is necessary is often fatal to a valuable plant; on the other hand, many a specimen has been lost by allowing it to become dust dry to the centre before giving water; for these reasons the "golden rule" to observe is water constantly at critical times. Rain water may be termed a necessity for Erica growing, but should the supply run short during the summer expose to sun and air whatever water is used for twenty-four hours, and place in it a bag containing soot, which will help to counteract the impoverishing tendency of hard water.—PLANTSMAN.

HORTICULTURAL POSSIBILITIES IN BERMUDA.

[THE following narrative by the special correspondent of *The Times* will be read with interest. Mr. Bishop is known by many who will peruse it. He was the winner of a silver medal offered by the late Dr. Hogg for an essay on manures, and this mainly led to his nomination for the position to which he was appointed by the Colonial Secretary on the advice of Sir William Thiselton Dyer, the eminent Director of the Royal Gardens, Kew. Mr. Bishop was a persevering student as well as a sound gardener and industrious worker of high character, or he could not now be superintending the work of improvement inaugurated by the Government in "a veritable Paradise set in the balmy and brightest of seas."]

"The islands of Bermuda are built by the winds on the most northerly coral reef in the world. The prevailing and most violent winds are southerly, and thus the southern or weather edge of the reef is exposed to the more extreme action of the waves. By this action the reefs as they reached the surface have been for ages reduced to a fine coralline sand composed almost entirely of carbonate of lime. There are over a hundred islands of all sizes, but the main portion of the land is fairly continuous for some twenty miles along the weather edge of the reef.

"The inhabited and cultivated portions of Bermuda consist of low hills and gentle declivities seldom rising above 300 feet, and clothed in their native condition with the Cedar trees for which the islands are famous, but the Cedar of Bermuda is not the Cedar of Lebanon. It is, properly speaking, a species of Juniper which lacks the grace of the true Cedar, though its wood possesses the same colour and fragrance. This appears to be the indigenous growth of the islands. Their soil, however, is fertile, and when carefully cultivated with due regard to its chemical requirements, it will grow almost anything that flourishes in the same latitude in other parts of the world—a latitude south of any portion of Europe, and approximately identical with that of Madeira, of Alexandria, and of Tripoli on the coast of Africa.

"The climate is mild and singularly equable even for such a latitude, the reason being that the islands are situated on the eastern edge of the Gulf Stream, and entirely protected by its genial influence from the spells of cold which in winter chill the same latitudes on the Atlantic seaboard of the United States. The range of temperature is limited, seldom falling below 50° in winter or rising above 85° in summer, the average being about 70°. Frost is absolutely unknown, fires are a superfluity except for cooking, Strawberries ripen in January, and the first crop of young Potatoes is dug and marketed before Christmas. There is scarcely a vegetable product, native to the latitude, of any economic moment which cannot be grown to advantage in the islands, and many tropical fruits and plants might be added to the list. Bermuda arrowroot was once famous, but its cultivation appears to have been almost abandoned. The Cocanut Palm grows here and there, and a few royal Palms of stately growth may be seen in a garden on the outskirts of Hamilton. The Grape, the Olive, the Peach, the Pineapple, the Banana, the Orange, the Lemon, and many other fruits might be grown to advantage, but their cultivation appears to be entirely neglected for economic purposes and only to flourish in a few private gardens.

"Flowers are, with one important exception, only cultivated for private use and pleasure, but their variety and luxuriance is delightful. The Freesia is, as it were, the winter Daffodil of Bermuda gardens, and it flowers copiously in midwinter associated with Cannas and other semi-tropical blooms on the one hand, and with Nasturtiums and scarlet Geraniums on the other. The Poinsettia is almost a tree covered with scarlet stars, the Hibiscus and the Datura flower freely throughout the winter, the Bougainvillea grows everywhere with amazing luxuriance and exceptional depth and variety of colour, and the Oleander, growing to a height of 15 feet or more, is a hedgerow plant throughout the islands. Roses of all kinds bloom in January, but the soil is too light for their perfect cultivation.

"The agricultural industries of the islands are at present limited in extent, and indolently worked. Bermuda has never recovered the prosperity it lost when the shipbuilding industry declined. The Cedar, once its wealth, is now only its protection against the violent storms which sweep the islands. The soil requires manure, but the pasturage for cattle is scanty, the herbage consisting mainly, not of grasses, but of creeping plants, which cover the soil without making much substance. The farmers appear to be lacking in enterprise, and to be content with much smaller gains than they might make with more energy and a larger share of intelligence. But the islands exhibit no signs of poverty, and it may be inferred that their social condition is more satisfactory than their economical. The latter is very far from satisfactory, to judge from the information kindly supplied to me by Mr. George A. Bishop, F.R.H.S., the energetic and capable Superintendent of the Bermuda Public Gardens and of the Botanic Station recently established in connection with the Royal Gardens at Kew for the development of the agriculture of the islands.

"At present, apart from local requirements and supply, the agricultural exports of the islands consist almost entirely of Onions, Potatoes, and Lily bulbs. The latter is the most lucrative crop of all, the yields of an acre of well-cultivated land being as much as £480 in bulbs sent to market in New York, besides a large quantity of stock bulbs reserved for subsequent cultivation. The Bermuda or Harris Lily was introduced into the islands not many years ago and is now one of their staple products. With such a yield per acre it discourages nearly all other forms of agricultural industry, but in spite of its affinity for the soil—it is almost impossible to eradicate it when once the land has been planted with it—it rapidly deteriorates unless cultivated with care and intelligence, unless the soil in which it is grown is properly cleaned, fertilised, and well worked, and unless the bulbs used for stock are well selected and carefully cleansed from parasites and other sources of disease.

"The bulbs when matured are dug up and shipped for New York, where they are classified according to quality, and distributed to the various horticultural markets of the world. The culture is so profitable as to induce carelessness, and the yield is by no means so abundant as it might be, the soil often being left foul and the bulbs imperfectly cleansed, with the result that many crops are lost or seriously injured by blight and other forms of disease. Mr. Bishop has devoted special attention to this subject, and last year he addressed to the Board of Agriculture in Bermuda an exhaustive and most instructive 'Report on the diseases affecting the Lily in Bermuda, their cause, treatment, and prevention.' He has since supplemented this report by a series of letters addressed to the Bermuda 'Royal Gazette,' on the use and selection of fertilisers and disinfectants specially adapted to the climate, soil, and cultural industries of the islands. These investigations have aroused much interest among the Bermuda farmers, and may in time produce important results.

"Next to the Lily in importance comes the Onion, and the two are often grown side by side in alternate patches on a Bermuda farm. The crop is lucrative even at a yield of some 7 to 10 tons per acre, which is about the average, though a higher form of cultivation would, as I am informed by Mr. Bishop, enable from 24 to 36 tons per acre to be grown. The Onions are exported to New York, and the earliest are ready for market before the end of the year. Of Potatoes two crops are grown in the year—one harvested about Christmas, and the other in March.

"These are the three commercial crops of the islands, and even with a negligent culture, such as prevails at present, they are grown to great advantage, though they suffer largely from blight and other maladies which might be materially abated, if not prevented altogether, by such measures as Mr. Bishop recommends. But the farmers of Bermuda are for the most part content with such profits as the soil and climate spontaneously yield, and they are slow to adopt new methods and appliances. It is certain that by such measures as Mr. Bishop has recommended the crops of Lilies and Onions might be

largely increased, and the outlay involved might be abundantly recouped in the course of a very few seasons. New York is the chief market for Bermuda, can be reached in forty-eight hours, and the most delicate produce delivered in perfect condition.

"The cultivation of the Bermuda Lily, itself an entirely modern industry, might probably be imitated and developed in many cognate directions. 'Freesias do well here,' says Mr. Bishop in some notes with which he has kindly supplied me, 'and as much as £100 worth have been harvested from 25 rods of ground. No disease has as yet attacked the plant, though the *Eucharis* mite takes possession of any injured bulbs.' This suggests a wide variety of horticultural possibilities entirely undeveloped as yet, and seems to imply that if Bermuda were cultivated like the Channel Islands it might become a nursery of greenhouse bulbs for the whole of northern Europe and the northern regions of America. Finally, I quote the following suggestive passage from Mr. Bishop's notes:—'There are about 400 acres of waste marsh land which I think would grow the *Hevea brasiliensis*, or Para rubber. This would in the course of six years bring in the colony from £20,000 to £40,000 per year, besides greatly improving the land. This waste land is at present occupied by Mangrove swamps, unsavoury, if not positively insanitary, in their present condition and of no economical importance.

"I have so far said little of the attractions of Bermuda as a winter resort. It combines the climate of northern Morocco with something like the scenery of Denmark, though with a greater variety and intensity of colouring. The winds are often violent, but never keen, the rains are frequent and heavy, but rarely of more than a few hours' duration. English visitors in search of sunshine must cross the Atlantic to reach Bermuda. But to the people of New York and New England it is a veritable paradise set in the balmiest and brightest of seas. You may leave New York with the temperature at zero and before midnight the water of the Gulf Stream will be logged at over 70°. The first night you sleep under blankets and wear furs on deck, on the second a sheet may be too warm unless the ports can be open. On the morning of the second day you rise in an atmosphere of eternal summer, and when you land in the middle of the day you find that the lightest of summer clothing is all and almost more than you need. Thenceforth you live in a climate of surpassing softness and amid scenery of unique and varied charm. The sea is of a delicate opalescent green, shot with soft browns where the reefs approach the surface, and deepening to the hue of the sapphire beyond the outermost reefs. The beaches are of the whitest of sand, and the inner sounds are studded with innumerable islands. With such a climate and such scenery Bermuda might almost flourish on its tourist season even if Lilies failed and Onions decayed."

LIVERPOOL AMATEUR GARDENERS' ASSOCIATION.

THERE was a gratifying attendance of ladies and gentlemen at the meeting held on Thursday evening, Mr. Histed presiding. Despite the fact that rain came down in torrents, the exhibition table presented a gay appearance, quite unusual at this time of year, by reason of the fine exhibits so superior from former meetings.

Mr. R. Pinnington gave a short paper on "Orchids for Amateurs," dealing with the treatment of newly imported plants, potting, watering, shading, resting, and the popularity of Orchids in general; also giving a useful list of reasonable-priced and easily cultivated varieties.

An interesting discussion ensued, Mr. Ardran being somewhat surprised that the subject of Orchid growing amongst amateurs should be recommended on account of its costliness and the Latin names attached to many of them, and which no amateur could thoroughly grasp. He wanted to know why English names could not be substituted. Far better would it be for them to keep to such plants as *Chrysanthemums* and *Roses*, and leave Orchids alone.

Mr. Pinnington, in reply, stated that his subject had been chosen for him. In contrasting Orchids and *Chrysanthemums* he said that pretty varieties of the former could be purchased almost at the rate of bedding plants. Regarding the labour attending their culture he ventured to say that with Orchids it was not nearly so exacting or more costly than with *Chrysanthemums*. Once potted, Orchids would stand for several years with only slight top-dressing, whereas the *Chrysanthemum* was all labour. As an illustration he pointed to a small plant of *Dendrobium Wardianum* in a 4½-inch pot, carrying forty flowers and exhibited by Mr. Drake. He would like Mr. Ardran to get him a *Chrysanthemum* to give the same return. Regarding all English names, he regarded the idea as somewhat premature. To undo the works of Linnæus, Reichenbach, and others would be a labour of generations, and then would not appeal to the world as at present. He could understand some great move in the direction if the English language became universal.

Mr. Smyth supported Mr. Pinnington's remarks, and moved a vote of thanks, this being seconded by Mr. Langley and supported by Mr.

Ardran, who expressed his pleasure with the explanation given by the lecturer.

Mr. Pinnington, who is a great lover of the *Chrysanthemum* as well as of all other beauties of nature, advised them to go in for both plants.—J. M. S.

HARDY PLANTS AT EDINBURGH SHOW.

AT the spring show of the Royal Caledonian Horticultural Show on 5th and 6th April hardy plants contributed largely to the display, although they were principally from under glass. Forced hardy shrubs were very conspicuous; Azaleas were brilliant and beautiful; Deutzias were full of flower and very attractive; Japanese Maples were used with much effect in the beautifully arranged tables sent by the Edinburgh nurserymen for exhibition; Lilacs were fine; hardy Rhododendrons, Hollies, New Zealand Veronicas, and Heaths, with Aucubas, were shown in Cunningham and Fraser's exhibit; while a good plant of *Magnolia Soulangeana* made an excellent effect. Other *Magnolias* were exhibited in other tables.

The show was too early for Daffodils in the district, with the exception of those grown under glass. These were well done. Messrs. Barr and Sons' Daffodil cup, value £7 7s., was not competed for, as forty distinct varieties were required, and I understand that none of the growers in the Edinburgh district could produce these at the time. Messrs. Barr and Sons had a fine exhibit of their own. They secured a first-class certificate for their new bicolor Daffodil Duke of Bedford, and were highly commended for their novelty Apricot. Madame de Graaf, Wear-dale Perfection, Gloria Mundi, and Glory of Leiden were among the flowers in the stand. *Saxifraga Burseriana* major was also shown, and cut blooms of *Anemone pulsatilla*. Messrs. Gordon & Son, Edinburgh, had a rockery with Daffodils, Primulas, Saxifragas, and other rock plants. A novelty which received a first-class certificate was *Primula Cashmeriana* alba. *P. frondosa* was very good, and a variegated leaved *Auricula* was new to me.

There was not much competition in the class for alpiners in pots or pans. I observed good pans of *Morisia hypogaea*, *Shortia galacifolia*, *Gentiana verna*, *Primula viscosa nivalis*, and *Ramondia pyrenaica*. They had evidently been grown under glass. There were some good Primroses in pots. A few of the blue Primroses were shown, but not many of these were of good colour. Polyanthuses in pots were fairly good, but alpine and stage Auriculas would have been better a week later. *Primula Sieboldi* was well shown, but there was nothing of exceptional merit among the plants. *Astilbe* (*Spiraea astilboides*) was plentiful, and some good specimens were shown. There were a few pots of Hepaticas, with a number of Tulips and a few *Chionodoxas* and Scillas. The prizes for British Ferns did not bring out many competitors, and some surprise was expressed at the winning exhibit having included in it a Fern remarkably like *Adiantum euneatum* instead of *A. capillus-Veneris*.

There was thus, it will be seen, little of special novelty or variety, but for this the inclement season is largely responsible.—S. ARNOTT.

THE AURICULA—ITS LONGEVITY.

I HAVE frequently been asked, "How long does an Auricula live?" and the question has been before now the subject of contributions to the pages of the Journal. I do not profess to be able to give a definite reply to the query, but would merely state one or two facts bearing upon it. I can point to a plant of Prince of Greens, that I got as a very small offset from the late Mr. Meiklejohn, of Raploch, at least fourteen years ago. I have, too, what is the only plant I remember seeing at Raploch of Ashton's Bonny Lass. It is still the neat small-sized specimen of that variety that it was in Mr. Meiklejohn's collection. It came into my hands after his death, and is retained in remembrance of the old friend, to whom so very many pleasant visits were made. It has never produced an offset, and is at least eighteen years old.

But these are youngsters compared to an Auricula that the late Mr. Charles Jeffery, of Falkirk, once showed me. It was a plant of Howard's Eclipse, for which he had paid 21s. thirty-two years before. In all that time it had bloomed only twice, and had produced one offset, which was lost. The plant was given after I saw it to Mr. Meiklejohn, with whom it died a year later, thus making out at least its thirty-third year.

In fact, it would seem impossible to assign any limit to the existence of a plant, which after its last year's growth, and the shortening of its stem or carrot, is virtually a new, while still the same plant.—A NORTHERN AMATEUR.

BORDER AURICULAS.

WITH the National Auricula Society's Southern Show, due on the 18th inst., it is a good time to draw attention to those charming hardy plants, border Auriculas, because they can be so easily raised from seed, and once raised and planted out into the open ground grow so freely, and continue to do so and to bloom for many years. We have few plants so hardy as is the border Auricula. It is now a capital time to sow seed, and it can be purchased cheaply of a good and variously coloured strain. It is best to sow in shallow pans or boxes, and in sandy soil, standing them under glass, where there is a little warmth to assist germination; also keeping the soil just moist, and until the seedlings are up lightly shaded. The seeds being hard-shelled germinate irregularly, and much patience is needful.—D.

BOURNEMOUTH AND DISTRICT CHRYS- ANTHEMUM AND HORTICULTURAL SOCIETY.

THIS Society held an Exhibition of Narcissi and other spring flowers in the Shaftesbury Hall on Thursday and Friday, and is to be congratulated on the splendid exhibits brought together. With the exception of Messrs. Barr & Sons, who staged a fine collection of Narcissi not for competition, the exhibitors were all local.

In the cut bloom section the classes were all for Narcissi, and some excellent blooms were staged. All the classes were filled, and there was good competition in most of them. There were also some magnificent bouquets and epergnes of Narcissi.

In the plant section there were classes for Narcissi, Hyacinths, Tulips, Lily of the Valley, Azaleas, Spiræas, Cinerarias, Primulas, Cyclamens, and Deutzias, and amongst them were some splendid examples of cultivation. Groups of miscellaneous plants were a special feature, and the nurserymen's groups of 140 square feet were greatly admired.

The Rev. G. H. Engleheart, Appleshaw, Andover, staged some of his unnamed seedling Narcissi, two of which obtained F.C.C.'s—viz., a greatly improved form of Sir Watkin, a magnificent bloom; and also a cross between Horsefieldi and Grand Monarque Polyanthus Narcissi, showing the character of both parents. A fine bicolored Narcissi, exhibited by Messrs Barr & Sons, was named Lady Willis, in honour of the lady who opened the Exhibition.

Non-competitive groups and stands of Narcissi, floral designs, and plants helped to make up a splendid exhibition, and as such was a great success; but although Bournemouth is especially full of visitors, neither they nor the general public patronised the Show as its importance deserved.

HAILSTORM INSURANCE CORPORATION, LTD.

SUPPLEMENTARY to our reference to the annual meeting of the Nurserymen, Market Gardeners, and General Hailstorm Insurance Corporation on page 275, the Secretary sends the following interesting particulars. Mr. Harry J. Veitch presided, and there was a good attendance of shareholders. The Chairman gave some interesting figures, showing the growth of the premium income and business, as follows:—

Year.	Policies in force.	Premium Income.	Square feet covered.	Value Insured.	Claims Paid.
		£ s. d.		£ s. d.	£ s. d.
1895-6	235	681 1 9	10,408,161	135,215 16 0	283 17 4
1896-7	346	889 11 5	13,886,095	179,366 11 1	Nil.
1897-8	550	1360 17 0	20,098,104	263,590 19 1	1532 17 5
1898-9	749	1736 0 6	25,619,760	343,439 7 8	Nil.

The working expenses had been reduced from £40 10s. 3d. per cent. of the income in 1895-6, to £22 9s. per cent. in 1898-9. The whole of the cost of formation of the Corporation (£399 4s. 4d.), and of furniture (£40 7s. 8d.), has been written off. £650 had been set aside as reserve for unexpired risks.

The report was unanimously agreed to, as was the recommendation of the Directors, that a dividend of 5 per cent. for the year, and a bonus of 5 per cent. be paid; and that £200 be placed to the reserve fund, and the balance be carried forward.

At an extraordinary general meeting, held immediately after the annual general meeting, it was resolved that a further issue of 5000 shares of £5 each be made at a premium of 4s. per share, and that £1 4s. be called up between now and 1st June, 1899. This will make the subscribed capital £50,000, and the paid-up capital £10,000. The premiums on new issue will go to reserve fund.

THE YOUNG GARDENERS' DOMAIN.

THE LACHENALIA.

LACHENALIAS, by their bright, conspicuous flowers, are charming objects for the decoration of the conservatory and greenhouse during the late winter and early spring months. They are also useful for house decoration if placed in convenient sized pots, as both foliage and flowers are alike beautiful; while their long spikes of bright golden flowers are well adapted for use in a cut state. They are of comparatively easy culture, and are well worthy of a place in every garden.

The best time to pot the bulbs is the first week in August, using clean well-drained pots and a compost consisting of equal parts of good fibrous loam, spent Mushroom bed manure, and leaf soil, with a liberal addition of coarse sand. Five-inch pots are the most suitable size in which to grow them, putting eight or ten bulbs in a pot, and covering them about three-quarters of an inch deep. Stand the pots on a shelf as near the glass as possible in a cool pit, or if that is not available place them in a frame. No water will be required for some time, but they can be syringed once or twice daily according to the weather.

When the bulbs have commenced to grow admit as much air as possible on all favourable occasions, but avoid cold draughts. Those in frames should be protected from frost, while those in heated pits must not be kept too warm, or they will become drawn and weakly; a temperature of about 45° during the late autumn and winter months suits them well. When the foliage has become well developed, and the roots have taken good possession of the soil, weak liquid manure may be given once a week, increasing it in strength and the frequency of application as the plants progress. If the stock is large a succession of bloom may be had by introducing a few plants into gentle heat at intervals during the

months of December and January, but they do not respond so well to the process of forcing.

After the flowering period is over the plants should not be neglected. Place them in a light sunny position, apply water as required until the bulbs are fully matured, and when the leaves begin to turn yellow the supply of water should be gradually diminished, and finally withheld. Lachenalias, like many other Cape bulbs, require a thorough ripening and a distinct period of rest; therefore when the leaves have died off place the pots in a frame free from drip, where they may obtain the full benefit of the sun, put on the lights, and allow them to remain in that position until August, when, other conditions being favourable, they will be well ripened and rested, and ready for a restart. Lachenalia Nelsoni, a garden hybrid, is far superior to either L. aurea or L. tricolor, and appears to be the best variety in cultivation.—S. P.

[A few spikes of L. Nelsoni sent by our correspondent were in all respects excellent.]

ASTERS AND STOCKS.

ASTERS and Stocks are amongst the best outdoor flowers for the summer months. They make a good display if arranged in the beds according to their height and the colours intermixed, and are also very useful for cut bloom, especially the Comet Aster. I have seen them make a grand show when planted at the edge of a large Vine border, using dwarf Asters in the front, with a row of Stocks at the back.

The seeds may either be sown in a heated frame in rather shallow soil, or in boxes, the compost consisting of equal parts of fine loam, leaf mould, and sand. Make it moderately firm, apply water before sowing, distribute the seed thinly, and cover lightly with a similar compost, but add a little more sand. Give a thorough watering with a fine rose can, and keep them rather close until the seedlings appear above the surface. If sown in boxes a temperature of 50° at night will be found sufficient, and the boxes must be kept as close to the glass as possible.

When the seedlings are large enough they should be carefully pricked off about an inch apart in boxes, using a compost of two parts of loam to one of leaf mould, and enough sand to keep it porous. Place the boxes in a similar position to that recommended for the seed pans, and keep them close and shaded for a few days if the weather be very bright, and lightly syringe about midday. Do not at any time let the plants want for water, and when they have made a fair amount of roots they should be removed to a cooler frame, and have more fresh air, always avoiding cold draughts.

The time for placing in their flowering quarters should be about the latter end of May, so all beds and borders chosen for them must be got in readiness prior to that date; the ground must be well manured and deeply dug. Thoroughly water the plants, so that when taken out of the boxes they will have a fair amount of soil attached to the roots. Plant at a distance of 10 to 18 inches apart, according to the variety, and make the ground firm, giving a good watering to settle the soil about the roots. During the summer months, if the weather become hot and dry, the plants will require water, and if a little liquid manure can be given occasionally it will be found advantageous.—P. R.

GREVILLEA ROBUSTA.

ONE of the most beautiful and useful foliage plants is, I think, Grevillea robusta, whether required for vases in the dwelling-house or for dot plants in the conservatory. It is somewhat surprising that there are not more grown, for they really deserve a place in every garden. They are not difficult to manage, and do not demand so much care and attention as do many plants of less utility.

The greatest difficulty, so far as my experience goes, is in raising the seeds, which needs careful attention; but once the first leaf is developed after the cotyledons there is every prospect of ultimate success. The most suitable compost is fibrous loam and well decayed leaf mould rubbed through a moderately fine sieve, with the addition of a fair sprinkling of silver sand. The whole must be well mixed, and (if the seeds are sown during the winter months) it should be warmed previous to sowing. The seed pots ought to be clean and well drained, so as to allow water to pass away quickly; the soil must be pressed fairly firm. It is a good plan to dibble the seeds in rather thinly, so that when potting, each plant can be taken out with a ball of soil, and consequently with less disturbance to the tender roots. A place where they can have a good bottom heat should be chosen to encourage rapid germination.

A hand-light placed over the hot-water pipes in a vinery makes a capital propagating frame; thin roofing-slates may be used to form a bottom for the pots to stand on. If cocoa-nut fibre refuse be used to plunge the pots in, so much the better, as it holds the moisture and prevents the soil getting dry so freely. The frame may be kept constantly closed till the young plants appear above the soil, when a little air should be given to prevent the seedlings becoming drawn, gradually increasing it till they are hardened sufficiently to bear full exposure.

As soon as the plants are large enough to handle without injuring them, they may be placed in thumb pots. Care should be taken to secure as much soil attached to the roots as possible. The compost may be similar to that in which the seeds were raised, using it warm. I think (especially in regard to seedlings), many failures would be prevented if this consideration of warming the soil prior to potting were more generally practised, as a check must be given to the young roots when they come in contact with soil many degrees colder than that in which they have been growing. The plants can be replaced in the propagating frame for a few days till they begin to take hold of the new soil, when a position on a shelf near the glass should be chosen for them, to keep them sturdy.

As potting becomes necessary a slightly heavier soil should be employed

with the addition of a little bonemeal, and if at hand burnt earth; for they seem to enjoy this mixture. After potting keep them close for a short time, till they have commenced to make new roots, when plenty of air, on all favourable occasions, should be given. If the plants are required for table, 5-inch pots will be found most serviceable, with larger sizes for other purposes. Weak liquid manure given occasionally, after the pots are filled with roots, is beneficial in inducing the leaves to retain that charming shade of green in which lies, to a large degree, the beauty of *Grevillea robusta*.—ASPIRANT.



HARDY FRUIT GARDEN.

Outdoor Figs.—The pruning of old-established trees on walls or gable ends should be completed now. Old, weakly, and crowded wood must be cut out, leaving the best placed shoots and short-jointed growths. Avoid shortening any shoots that are left, as the fruit is borne at the apex of well-ripened growths of the previous year's formation. The pruning out of old wood gives an opportunity for new wood to start from buds near the main branches. These, if allowed plenty of light, air, and space, will grow sturdily, and become well ripened for fruiting the following year. They must, however, be limited in number when the buds start by careful disbudding.

Planting Young Fig Trees.—Where a warm sheltered position can be found, with the soil in a well-drained condition, and of a fertile calcareous character, young trees may be planted. Soil deficient in lime or chalk must be improved by the addition of these materials. The border need not be wider than 6 feet, and it must be made very firm, no manure added, but the surface may be mulched in summer. The present is a suitable time to prepare the site, procure the trees and plant.

Pruning and Training.—The best trees to plant are maidens having one stem. Shorten this stem after planting to 15 inches. The breaks which issue can be reduced to two of the best placed, one on each side, equal in strength and length if possible. They should be encouraged to grow strongly, as in the succeeding year two shoots must be selected from each for training as main branches. Allow plenty of space to admit of successional shoots, which will require room for training at full length. One of these ought each season to be allowed to fruit, while an adjoining shoot may be cut back to one bud. Treated thus every year there will always be fruiting shoots, and growths for succession.

Protecting Fruit Trees.—When cold, bright and frosty nights prevail, protect the blossoms of Peaches, Nectarines, and other choice fruit trees. Double or treble fish netting makes good protecting material, and as it admits light and air it may remain on the trees permanently until protection is unnecessary. However, if tiffany, canvas, or woollen netting of a small mesh is employed they must be removed when not required for protecting. Whatever material is used it ought to be placed so that it does not rest upon the branches. Slight, temporary framework of smooth wood or poles securely fixed answers the purpose best. It is only wall trees and comparatively dwarf bush or cordon trees that can be readily protected. Large standard or bush trees cannot be dealt with.

Strawberries.—Complete the planting of young plants from nursery beds. If without soil attached to the roots spread out the latter in the soil and cover carefully with a little fine material. Make the whole firm about them, but leave a little basin round each plant for holding water, which it will be necessary to afford after planting in light soil and in dry weather.

Rake off old exhausted mulching from established beds and fork up perennial weeds. A dressing of soot, 1 peck to the rod, guano 1 oz. to the square yard, or nitrate of soda, half ounce to the square yard, may be given to large established plants, sprinkling round but not immediately on the crowns. Liquid manure may be given to the plants later on. In the meantime lay down a liberal mulching of manure consisting of short and long material combined. This will afford nutriment and eventually protect the ripe fruit from dirt.

Fertilisers for Fruit Trees.—The trees which require assisting at the roots are those that grow weakly, also heavy cropping trees and bushes, which demand plenty of nutriment to assist them in developing and perfecting their fruit, as well as in making fresh wood growth. Superphosphate is an excellent stimulant to the roots, and may be applied at the rate of 3 ozs. to the square yard, pointing it into the soil. In light mould superphosphate is best mixed with half the quantity of muriate of potash. In heavy soil bonemeal is a good manure; apply $\frac{1}{4}$ cwt. to a rod of ground. The soil made black with soot, and this watered in, is good for the foliage. The various general artificial fertilisers may be employed with good effect in most cases if scattered round the bushes, forking or watering in.

Nitrate of soda and sulphate of ammonia must be used sparingly, chiefly when growth is deficient or the soil poor; 1 oz. to the square yard sprinkled on the surface as far as the roots extend is a suitable dressing. Over-manured soil rich in humus ought to be treated with lime; 1 lb. to the square yard will act upon the acid in humic matter and liberate plant food.

Dried poultry manure contains valuable constituents, but it is very strong in action, and should be mixed with six times its bulk of dry soil, and applied as a top-dressing.

Half-decomposed manure laid upon the soil over the roots of Raspberries, Gooseberries, and Currants affords nutriment as well as conserves moisture in the soil. A liberal application may be applied now to Raspberries, and to Gooseberries and Currants as soon as fruit is set and swelling. In light soil especially mulching is very essential.

FRUIT FORCING.

Cucumbers.—Good progress and grand fruit has been the exception rather than the rule, the sharp weather having had a retarding effect on the plant and that of stunting the fruit. Attend to tying out the growths, stopping one or two joints beyond the fruit, removing bad leaves and exhausted growths, so as to maintain a succession of healthy fruitful shoots. Water will be needed copiously by plants in houses, and liquid manure may be given once or twice a week with advantage. Syringe the foliage and walls daily at closing time, or about 3.30 P.M., and damp the house well in the morning and in the evening. Shade only to prevent flagging. The floor may be sprinkled occasionally with liquid manure, or fresh yet sweetened horse droppings sprinkled on the bed will answer the twofold purpose of evolving ammonia to the benefit of the foliage, and supply nutriment to the soil, as well as encouraging surface roots.

Pits and Frames.—Plants in these will not need shading as yet, but they must not be allowed to flag. Use tepid water through a fine rose watering pot at about 3 P.M., closing the lights at the same time, but as the nights are yet cold, be careful that the foliage becomes dry before dark. Close early, employing a thick covering at night, such as a double thickness of mats. Maintain a good bottom heat by linings, renewing them as necessary. Preserve a night temperature of 65° to 70°, 70° to 75° by day, 80° to 85° or 90° from sun heat, ventilating from 75°, being careful to avoid cold and drying currents of air, and close sufficiently early to run up to 90° or more. Sow seeds of ridge varieties, and keep young plants of these and other kinds near the glass.

Peaches and Nectarines.—*Earliest House.*—Discontinue syringing when the fruit commences to ripen, or it will cause the skin to crack, and impart an unpleasant flavour. It is very important to have the trees quite free from insects by the time the syringing ceases, as it must when the fruit commences ripening. If there be the least trace of red spider apply an insecticide, and follow afterwards with a forcible syringing, repeating the process if necessary, so as to thoroughly free the trees from the pest. It is only the very early Peaches (Alexander, Waterloo, Early Beatrice, and Early Louise) and Nectarines (Advance and Cardinal) that will be ripening; the others must be well syringed, and have abundant supplies of water and surface mulchings of short manure or rich material.

Second Early House.—Trees started at the new year are more advanced than usual, being accelerated by the mild and bright weather. The fruits are now stoning, and will need care in preventing checks from sudden fluctuations or depressions of temperature, that of the night being kept steady at 60°, with 5° more on mild nights, whilst on cold nights it may fall to 55°, 65° by day artificially in dull weather, 70° to 75° on cloudy days, but with clear intervals, ventilating from 70°, and freely above 75°. Attend to tying-in the shoots as they advance, and encourage no more growths than will be required for future bearing, the extension of the trees, and the swelling of the current crop. The trees must not lack moisture at the roots, affording liquid manure if they are heavily cropped and not making satisfactory growth; but avoid undue excitement to trees in full vigour, as any impulse given to growth during the stoning is apt to affect the process disastrously. Syringe twice a day in bright weather, and if necessary apply an insecticide, it being imperative that the foliage be kept clean.

Trees Started in February.—Thinning should commence when the fruits are the size of horse beans, removing the smallest and those on the under side of the shoots. Retain sufficient to admit a further thinning when they are the size of marbles, and then only a few more need be left than are required for the crop, leaving those that are best situated for receiving air and light. Disbudding must not be neglected, and laying-in growths required for next year's bearing will need careful and timely attention. Syringe the trees twice a day when the weather is bright, occasionally only when dull, and let the second syringing be at closing time or early in the afternoon, so as to have the foliage fairly dry before night. Increase the temperature to 55° or 60° at night, 60° to 65° by day, ventilating from the latter, and increasing with sun heat to 70° or 75°.

Trees Started in March.—Many more fruits have set than can possibly be brought to perfection, and an overset is a source of great weakness, often causing the fruit to be cast in showers, leaving but a scanty crop. There is no preventive but to thin the fruits as soon as it can be seen which are taking the lead in swelling, and it is better to well thin the flowers before they expand. Disbud gradually, for severe shoot removal favours growth of wood only, and sometimes gives a severe check to the fruits, causing them to drop. Syringe so as to enable the fruits to throw off the remains of the flowers, but avoid heavy syringing at this stage, as the foliage can evaporate little when wet, indeed the stomata close under water and elaboration is greatly impeded. Ventilate early and freely, so as to secure thoroughly solidified growth. A temperature of 50° to 55° will be sufficient, not allowing an advance above 65° without free ventilation.

Late Houses.—A splendid display of blossom and a grand smell of nectar characterise the trees generally in these structures. There ought

not to be anything neglected that is likely to insure the perfect fertilisation of the flowers, as without it fruit cannot attain perfection. Many of the large Peaches have large blossoms, and these sometimes have the anthers deficient of pollen. Attend, therefore, to fertilising the flowers, not trusting to insects, though bees effect the process very effectually, but they seem to be so hindered by the glass that they fight shy of fruit houses. It is not the difficulty of getting in, but of egress from the structure that bothers the bees, for when they are laden with pollen and nectar, they care about nothing but journeying homewards, and many succumb to the frantic endeavours made to take a direct flight. Secure a temperature of 50° by day, and ventilate freely, allowing an advance to 65° from sun heat. Leave a little air on constantly. Where there is a superabundance of blossom, remove all on the under side or back of the trellis or shoots, and, though this is best done before the flowers expand, it will materially aid the setting and swelling of the fruit.

In unheated houses mark 50° as the point for admitting air, and increase the amount with the advancing sun heat, not allowing an advance to or over 65° without full ventilation. Attend to fertilising the flowers, choosing the early part of fine days, always when the blossoms are fully expanded, and the pollen flying in a cloud of gold-like dust when the anthers are disturbed. There must not be any deficiency of moisture at the roots. When there is an appearance of frost, the house may be closed a little earlier, otherwise close at 50°.

THE BEE-KEEPER.

PRESENT CONDITION OF STOCKS.

WHAT is the general condition of stocks throughout the country? This is a pertinent question interesting to all bee-keepers, as a strong colony of bees at the present time will doubtless give a good account of itself when a surplus can be obtained. Since the favourable change in the weather took place, and a higher temperature has prevailed, we have been able to thoroughly overhaul the majority of the stocks in our apiary. In addition to this we have closely observed the working of the bees from other colonies. It is, therefore, satisfactory to report they are in a generally forward condition. Weak stocks are an exception, indeed we do not remember any previous year when there were so few.

What is the cause of this? We do not think it is owing to the past winter being so mild, because a year ago the winter was very similar, but the bees were not in as good condition. The two chief factors have been, first the large amount of natural stores that were left in the hives last autumn, and secondly the comparatively dry weather experienced since.

Many bee-keepers have expressed the opinion that honey which had become discoloured through an admixture of honeydew was unfit for stores for bees to winter on. The present season has exploded that fallacy, as never was honey more contaminated with it than last year, and the present good condition of stocks proves how beneficial it has been to the bees.

WEAK STOCKS.

Whether the apiary be large or small there will doubtless be many weak stocks in various parts of the country. This may be caused, as we mentioned in previous notes, from queenlessness, shortness of stores, or to the queen being old, or from some cause not visible to an ordinary observer. But whatever the cause, steps should at once be taken to remedy it. Weak stocks at this season are not likely to be of much use to the bee-keeper for storing a surplus, and there are many such in the south, judging from the numerous colonies we examined there last autumn, which, owing to the drought, were then short of stores.

We are anxious to impress on bee-keepers the necessity of having each individual stock in the apiary crowded with bees, and ready to take advantage of the honey flow when it comes. All that is required is close attention to the details of management. It is not nearly so difficult as it at first appears.

A bee-keeper may have half a dozen stocks of bees at this season, some of which are very weak. If left to take their chance little surplus will be stored. Instead, however, of keeping six colonies, reduce the number to three by uniting the three weakest stocks to the three strongest. If this rule were more generally carried out many bee-keepers, who complain of the shortness of their honey crop, would have a much better harvest in consequence, and less trouble than they had with a greater number of hives. Unity is strength, in bee-keeping as with everything else, and the greater the number of bees in a hive the better prospect there will be of obtaining a surplus.

We recommend all weak stocks to be united to the colony nearest to it. The bees need not be disturbed at this season. The old queen intended to be destroyed should first be removed and the bees in both of the hives sprinkled with flour, and the combs with the adhering bees placed alternately; cover up warm, and not a bee will be lost.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Roses and Chrysanthemums (*Veritas*).—You ask "if these plants lend themselves, without contracting disease, to coddling treatment in the spring and summer." The answer is, Decidedly not. They will be better in the open air night and day than "coddled" in the fireless room, though a sojourn in it on possibly severe nights yet to come may be advantageous if the plants are starting freely into growth. In the summer the pots ought to be protected from the sun, either by plunging them half their depth or more in ashes, sinking them in larger pots, or shading with boards; or the roots may suffer from heat and drought, in which case insects will take possession of the leaves, and the plants produce nothing but disappointment.

Roses on Their own Roots (*E. T. H.*).—There are many Roses that will do well upon their own roots. The following twelve are equally good, and you can select the desired colours by looking through any descriptive catalogue:—Marie Van Houtte, Madame Lambard, Gloire de Dijon, G. Nabennand, Général Jacqueminot, Madame Luizet, Duke of Edinburgh, Souvenir de la Malmaison, Madame Plantier, Mrs. Bozanquet, Mrs. John Laing, and Dupuy Jamain; while all of the Mosses and Provence varieties are best when grown in this form. Cuttings of the current year's growth should be taken in September, when the wood is about two-thirds matured. At the proper season we shall probably be publishing an article upon this method of culture.

Marechal Niel Rose Casting Its Leaves (*W. S.*).—The leaflets appear to have been cast through something having cut off the supply of sap, the midrib being quite yellow at the point of junction with the petiole. This yellowish appearance has passed up some of the leaves and given rise to yellow spots, such as appear before growths of the Rose fungus, *Peronospora sparsa*, issue from them. We did not, however, find the mycelial hyphae in the yellow spots, nor any micro-organism to account for the leaflets dropping. Fumigating often causes the leaves to fall, sometimes a week or ten days afterwards, though commonly much sooner, the weather having a great deal to do with the period. If bright they fall in a day or two, and if dull weather follow they may not drop for many days after the fumigation. The solution you have watered with is rather a strong one, especially when the Rose has tender roots, as it has when making fresh growth, and this may have injured the young rootlets, hence facilitated the falling of the leaves. We can only advise a more freely ventilated atmosphere, and careful procedure in the future in both fumigation and the application of the fertiliser. There may be other reasons for the leaves falling, such as warty excrescence on the stem just below the ground, or even level with the surface, which sometimes causes the plants to lose their leaves by restricting the supply of sap.

Diseased Tomato Plant (*C. A.*).—The plant, a weak long-jointed one, had the small root fibres dead, but we did not detect any fungus at the roots, though they have the appearance of the well-known "sleepy" disease. There was, however, no trace of it in the roots, root-stem, or stem. On the leaves was a rusty appearance, especially the footstalks and midribs of the leaflets. A bit of this, under the microscope, yielded the seab fungus of the Tomato, *Cladosporium fulvum*, syn. *C. lycopersici*, and also the fertile hyphae of the fungus named *Botrytis cinerea* var. *slerotiphila*. We advise a dressing to the soil of a mixture of equal parts air-slaked chalk lime and soot by measure, two good handfuls per square yard, or a tablespoonful per pot, occasionally covering with a little soil where it is not possible to point in very lightly. Dust the plants with a powder preparation of sulphate of copper, such as anti-blight, fostite, or other advertised fungicide, applying with a bellows apparatus, and to the under side of the leaves, repeating occasionally, or about every ten days. But beyond all things give the plants more air, some constantly, moisture and closeness being very favourable to the parasites. The plants will then be made more resistant, which is the great point to aim at, securing sturdy plants from the start, and keeping them so right along, then they will be in the best condition for resisting the attacks of their enemies.

Books (F. B.).—For a book combining botany and practical gardening, you will find "Johnson's Gardeners' Dictionary," procurable from the publisher, *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, London, most useful. The price is 9s. 6d., post free. Sir Joseph Hooker's "Primer of Botany," which is published by Macmillans, and can be obtained through any bookseller for 1s., is excellent for a beginner in the study of botany; while for popular gardening you cannot do better than "The Garden Manual," published at 12, Mitre Court Chambers, whence it can be had post free for 1s. 9d.

Dendrobium Wardianum Malformed (*Twenty Years Subscriber*).—The flower sent is a peculiarly malformed *Dendrobium Wardianum*, the petals being entirely absent. The viscid stigma has almost disappeared, but there is pollen in plenty. It will probably appear again in the same plant, though when well established the latter may produce perfect flowers.

Pruning White Jasmine (N. B.).—Yes, it should be pruned, cutting out the dead wood, shortening foreright growth to two or three buds from the base, thinning the growths where too crowded, and shortening the long shoots required to fill space to firm well-ripened wood. This should be attended to without much further delay.

Manure for Parsley (O. F.).—Sutton's A1 manure is better than kainit, as it contains phosphoric and nitrogenic substances, as well as the properties of kainit. The 2½ per cent. of air-slaked chalk lime is easily mixed with soil, taking a hundred tablespoonfuls of the soil and adding to that amount 2½ tablespoonfuls of the lime, sprinkling on the soil and mixing thoroughly a few days before use.

Forcing Newly Planted Seakale (Idem).—The Seakale may be covered with pots the same season as planted, and the growths thus blanched be cut for use when ready. It will, however, weaken them considerably for another year, hence is not practised, especially on small planting crowns. Of course, the tops unblanched can be cooked and eaten; they are much tougher and stronger in flavour than blanched heads.

Conifer Brown (Scotland).—The small spray, evidently of some Spruce, would not be improved by thinning out the branches, unless carefully done and confined to the very weakly and partly dead or dying twigs, or small branches. This may be desirable, operating now, but avoid excessive interference with the principal side and leading growths. Give the tree a top-dressing of leaf soil thoroughly reduced or old cow manure, leaving on the surface as a mulch, about an inch thickness sufficing, and from the stem all round to the outside of the spread of the branches.

Gerbera Jamesoni (F. C.).—This plant was introduced from the Transvaal in 1889, and has occasionally been exhibited at the meetings of the Royal Horticultural Society. It is probably obtainable from several of the leading nurserymen, though it is neither widely known nor grown. It was illustrated on page 5 of the *Journal of Horticulture* for July 2nd, 1896, and of this issue we are sending you a copy.

Black Currant Twigs Infested with Mite (E. W.).—Yes, the buds are infested by the Black Currant bud gall-mite, *Phytoptus ribes*, nearly all the buds being affected. The best remedy is to cut off all the attacked shoots and burn them, or remove the galled buds, placing them at once in a pail containing some paraffin oil, the sides being smeared with it. This we have found very effectual, following with a spraying of petroleum emulsion when the bushes are quite dry. The soluble petroleum sold by nursery and seedsmen answers well, only attend to the instructions. We have not found the mite on either Red or White Currants; if you do, kindly submit specimens of affected buds.

Eradicating Coltsfoot (G. G.).—The chief thing to be attended to is draining, the land in most cases being cold and wet. The drains need not be more than 4 feet and should not be less than 3 feet in depth, placing them about 5 yards apart, and giving proper fall and outlet. This done, trench the ground as deeply as the good soil allows, and remove all the roots of the weed. Where this cannot be adopted, cut off the tops as often as they appear above ground, and persist in it from time to time, then the growth will get gradually smaller, and finally disappear. Draining, however, is the thing, together with the extraction of the roots. The draining will improve the land as well as hinder the growth of the weed.

Non-appearance of Peas above Ground (J. H. B.).—The creatures found on the Peas underground are the spotted millipede, *Julus guttatus*, which is a general feeder. The pests are harboured by vegetable matter in the ground, hence dressings of quicklime are useful. A stone of freshly burned lime, slaked with the smallest amount of water possible, and sprinkled evenly over a square rod of ground, has an excellent effect on both the land and the vermin in it, and in the course of a fortnight or three weeks a dressing of soot, one peck per rod, has a still further beneficial effect on the crop. You may use, if you like, a mixture of equal parts superphosphate (mineral 37 per cent.) and kainit, 3½ lbs. per rod, and follow with 1½ lb. of finely crushed nitrate of soda, when the plants are commencing to grow, the quantity named being for a square rod of ground, and should be applied when the plants are dry, but the ground moist. As traps there is nothing better than slices of Mangold Wurtzel, inserted here and there just within the ground or laid on this and lightly covered with short litter, examining daily and destroying the pests by removing the baits carefully and placing in hot water. Renew the baits as required, and the pests will soon be got rid of.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a

flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. F. W.).—1, *Sparaxis tricolor*; 2, dead. (N. B.).—1, *Polygala Dalmatiana*; 2, *Primula Reidi*; 3, *Saxifraga Boydii*; 4, *Celsia arcturus*. (B. C. C.).—Kindly read the rules given above, and pack your specimens in accordance with them. The Ferns you despatched in brown paper on Saturday were quite dead when they reached us on Monday. (C. T.).—1, *Taxus japonica*; 2, *Laurus azorica*; 3, *Gaultheria Shallon*; 4, *Cryptomeria japonica*; 5, C. Lobbi.

COVENT GARDEN MARKET.—APRIL 12TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, ½ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 0 10
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Camellias, per doz. ...	1 0	2 0	Narcissus, doz. bnchs. ...	1 0	2 0
Carnations, 12 blooms ...	1 6	3 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, single yellow, beh. 12 blooms ...	0 6	0 8	Pelargoniums, doz. bnchs.	6 0	10 0
Daffodils, double, bunches	0 4	0 6	Roses (indoor), doz. ...	2 0	3 0
Eucharis, doz. ...	2 0	3 0	„ Red, doz. ...	4 0	6 0
Freesia, doz. bnchs. ...	2 0	3 0	„ Tea, white, doz. ...	2 0	3 0
Gardenias, doz. ...	2 0	3 0	„ Yellow, doz. (Perles)	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Safrano, doz. ...	2 0	2 6
Hyacinths, Roman, bunch	0 4	0 6	Smilax, bunch ...	2 0	3 0
Lilium Harrisii, 12 blooms	4 0	6 0	Tulips, bunch ...	0 4	0 6
„ longiflorum, 12 blooms	6 0	8 0	Violets doz. bunches ...	0 6	1 6
Lilac, bunch ...	3 0	4 0	„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 8 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	8 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



AMERICAN EGG COMPETITIONS.

A YEAR ago last 1st of March a movement was set on foot in England by Col. de la Bere—a kind of competitive egg production. A given number of hens were to be enclosed in a given space and fed in a given manner; a close record was to be kept of all expenses incurred and of all profits received, and the result was to be made public in March, 1899.

We have only seen one of these balance-sheets, and we were struck—1st, by the small amount put down as paid for labour

2nd, the high price obtained for the eggs; 3rd, the very slight variation in number of eggs produced in certain of the months; and, 4th, by the fact that no account whatever was taken of the food supplied to the fowls from the house. This to us seemed a serious omission. Our household is not a large one, and we think domestic affairs are economically managed, and yet every day there are many valuable odds and ends that go to greatly improve the menu of our fowls.

We have great faith in the value of house waste as fowls' food. It is generally served warm, there is variety—fat, starch, and sugar, and the pickings of bones from the stock pot are not to be despised; and yet all this is counted as of no value. We wonder what a pig-keeper would give for the waste of a gentleman's house per week? This is an item that needs consideration.

This week we have come across an account of similar trials of fowls in the States. We found it of interest to ourselves, and can only hope it may prove equally interesting to our readers. At any rate, an account of these experiments is deemed worthy of a place in the report issued by the Board of Agriculture for Kansas.

The good folks of the States have a pull over us, as food of all sorts is so wonderfully cheap, and it is the food that makes the egg. We are rather surprised to find that the first prize winners were white Plymouth Rocks. They are good birds, but we did not think they would thus come to the fore as egg producers. They are inclined in England to get a bit broody as the summer goes on, and they certainly make excellent mothers. The second prize birds were cross-bred Leghorn pullets (rosecomb brown Leghorn cock, white Leghorn pullet). The third prize went to white Plymouth Rocks. We cannot find a record of the variety that obtained fourth prize, but the fifth were all brown Leghorns, and the sixth barred Plymouth Rocks.

There were 224 entries, so one may suppose there was great variety in the breeds engaged in this contest. The eggs of all competitors were valued at the current market price obtainable in Pittsburg market. Now this seems to us a capital idea. In all competitions of this sort there should be a fixed egg value, or it is not fair to those who live far from good markets. Why should we only get 1s. for sixteen eggs in our local market when another man near a great centre sells identically the same eggs at fourteen for 1s.? There must be equality, or the test is of no value.

The first prize birds (white Plymouths) averaged 289 eggs each. These eight hens with a cockerel lived in house 12 feet by 20. The house faced south, was well built and well lighted. There was a small outside run, but during the months of December and January the birds were kept confined. They had grit and oystershell, and twice a week granulated bone. The morning meal was an equal mixture of crushed maize, oats with middlings and bran, and fine beef meal. This was served hot. For midday the ration was a little wheat, and at night maize.

As the season got warmer the morning's meal was mixed cold, and wheat took the place of maize, as being, we suppose, less heating in its nature. In the winter the house was cleaned out twice a week, in summer every day.

The second prize birds (Leghorns) produced 283 eggs, and were kept in a warm, comfortable draught-proof house. The food was very much the same as in the first example; for the sake of the exercise entailed the corn was thrown among straw, the search for hidden treasure keeping the birds occupied and amused. These birds got a certain quantity of barley and buckwheat, and milk or butter-milk. They, too, had a good supply of coal ashes and road dust for a bath, and sea shell and limestone for digestive purposes.

The first six lots of birds were curiously near in point of eggs, being respectively 289, 283, 280, 279, 277, and 262. Twenty lots of birds averaged over 200 eggs per hen per annum. We fancy these good results were brought about as much by comfortable warm quarters as by the good feeding.

Nothing thrives or does well if cold or chilled, and to see some of our fowl houses in England, one is led to ask, What redeeming feature have they? Cold, draughty, dark, and therefore dirty. Any

place seems to do for hens—tiles off, doors unhinged, and general discomfort. We do not believe in pampering, but we do believe in a little comfort and cleanliness; some place where in cold, wet weather the poor things may stand the chance of a good dry dust bath, where all the food eaten need not be used up just to keep a little warmth in the poor shivering frame. A box of grit or flints to help in mastication, and some lime or mortar scraps to provide material for the egg-shell is valuable. A warm morning's meal is not difficult to attain; a saucepan of boiling water will mix up a good deal of meal, and make a very comforting dish. We enlist the sympathies of the kitchen deity, who if propitiated can do much in the way of saving scraps of fat and skin, and so on, from plates and dishes. It is wonderful how bits will accumulate, and how valuable all those bits are no one but an ardent poultry man knows.

Warmth, cleanliness, variety in food are the main factors in egg production, but remember that as every dog has his day, so has every hen, and it is only the young and lusty that will fill the egg basket.

Sentiment must have no place in the hen yard; it is a case of the survival of the fittest, and the old must make way for the young. A hen's life of usefulness is short; with proper preparation she may make on her owner's dinner table a good end to a useful life.

WORK ON THE HOME FARM.

The cold snap is over and almost forgotten, its effect on farm work having been almost nil, for drilling was well up to date, and can now be quickly finished. Turnips are almost if not quite consumed, exceptionally so, and there is nothing to hinder a very early completion of spring sowing. This is as it should be, for although late-sown Barley occasionally does well, the chances are strongly in favour of that sown before old Lady Day.

Cattle are being gradually hardened, but the weather is quite cold enough for them, and with plenty of straw and hay for them there is no necessity to run risks, as grass has still to grow. Sheep prices are better for the milder weather, but the movement is a slow one.

Everyone complains of the seed pastures having gone off, and it is not surprising, for where they were stocked, and early stocking has been very general this spring, every animal during the frost would be carrying five mouths instead of one.

Spring tares sown now will come in very useful about harvest time for the horses, or any time they may be ready for the dairy cows. Grass diminishes both in quantity and quality after midsummer, and the tares, which are not much affected by dry weather when they have once got a start, are invaluable during a drought. They must be well treated, and there is nothing for them like good spit muck. It does not matter whether they are drilled or sown broadcast, as long as they are well covered.

Rooks have been more troublesome than usual on the early sown Barley, perhaps because it has been slow in coming up. They have also been a great nuisance about the home yards, having taken very seriously to stealing eggs. Shooting a few malefactors and hanging them in chains has apparently little effect; we shall perhaps try the effect of a dead one or two placed in traps, as if caught therein. This has been previously tried in corn fields with success.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899. April.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	12	30.131	49.2	48.3	S. W.	46.3	58.5	47.2	75.2	42.8	0.027
Monday	3	30.098	49.4	47.2	W.	46.7	60.8	47.5	98.9	46.7	—
Tuesday	4	30.145	52.2	48.4	S. W.	47.0	55.6	45.7	83.8	41.2	0.053
Wednesday ..	5	30.214	51.1	44.9	W.	46.3	60.0	42.7	99.3	37.3	0.055
Thursday ..	6	30.106	51.7	47.6	W.	47.1	62.9	47.2	104.9	42.1	0.112
Friday	7	29.167	46.9	45.1	S. W.	47.9	52.4	45.2	86.8	40.7	0.113
Saturday....	8	29.585	45.8	40.1	W.	46.2	49.2	40.3	98.3	35.9	0.149
		29.921	49.5	45.9		46.8	57.1	45.1	92.5	41.0	0.509

2nd.—Fair, but almost sunless.

3rd.—Slight rain in small hours; overcast morning; occasional sun after.

4th.—Overcast day, with rain from noon to 3 P.M.; fine night.

5th.—Brilliant early; sunny morning; cloudy afternoon; rain from 11 P.M.

6th.—Rain till 1 A.M.; generally sunny in morning; showery from 3 P.M.

7th.—Gale all day, with frequent heavy showers, and an occasional gleam of sun.

8th.—Brilliant early; wild day; shower of large conical hailballs at 10.5 A.M., many exceeding quarter of an inch in diameter; rain and snow at 0.25 P.M.; heavy rain and snow at 2.45 P.M., and other showers.

A mild and rainy week, with little sunshine; the latter part stormy.—G. J. SYMONS.

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Den. Crassinode, imported, this variety } 3/6 5/- 10/-
also includes remarkably fine specimens }
Vanda Cœrulea, established or imported } 9d. per leaf.
Odonto. Cirrhosum, imported } 2/- 3/6 5/- 7/6
Hallii } fine } 2/6 3/6 5/- 7/6 10/6
Oncidium Macranthum { condition } 3/6 5/6 7/6
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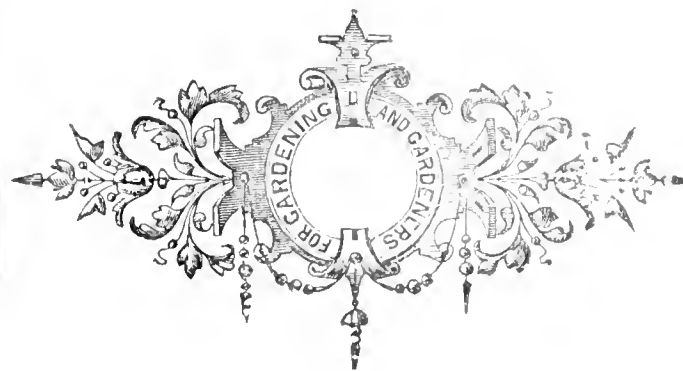
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*Journal of Horticulture.*

THURSDAY, APRIL 20, 1899.

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DAHLIA ANALYSIS.

TO a moisture loving plant like the Dahlia the drought of last year proved extremely trying. The dry weather was of no ordinary character. Indeed, over the greater part of England the drought as affecting vegetation generally may be said to have lasted from the beginning of June until the middle of October, or for nearly the whole period of the Dahlia's existence above ground. It need, therefore, be no matter for surprise that the show held by the National Dahlia Society at the Crystal Palace last year was not so extensive as that of the previous year—the record exhibition of the series. Notwithstanding all the drawbacks of the season, which in some instances prevented exhibitors putting in an appearance at the show, the display was a very creditable one, and the number of exhibits in most of the sections compares very favourably with that at the generality of recent exhibitions.

The Shows and Fancies taken together were more numerous staged than at any of the five previous exhibitions, with the exception of those held in 1894 and 1897. On the other hand the Pompons were decidedly below average, while the Singles were in better form than in any year since 1894. The Cactus Dahlias proved, however, the feature of the show, the number of bunches exhibited having risen in the last three years from 220 to 577—the greatest number yet staged, and twice as many as at any previous show, except that of 1897.

The short table which follows will give as usual the number of blooms or bunches set up in competition at the National Dahlia Society's exhibitions in each of the five sections into which Dahlias are now divided:—

	1894	1895	1896	1897	1898
Shows (No. of blooms)	894	827	798	930	838
Fancies	301	287	276	312	305
Pompons (No. of bunches)	192	210	192	234	190
Cactus	246	280	220	432	577
Singles	138	102	126	116	131

In the foregoing statement the number of flowers staged in the classes set apart for three or more blooms of any one variety is not included.

No. 2638.—VOL. C., OLD SERIES.

When I first began these Dahlia analyses I was under the impression that the greater the number of exhibitions for which I had records available the more trustworthy would be the averages obtained, and therefore the more accurately could the different varieties be placed in the tables. But after a time I began to see that with very few exceptions it would not do to compare the doings of any one variety for an unlimited number of years if the best and most comparable results were to be obtained. For not only do even the choicest established varieties, as will be seen later on, vary in the estimation of exhibitors as time goes on, but the claims of the new comers, with their shorter records, have also to be considered. In the present analysis all the varieties in the Show and Fancy tables which will allow of this being done, and they comprise more than half the Show varieties in the table, depend for their positions upon their average records for the last eight exhibitions.

For the thirteenth year in succession Mrs. Gladstone heads the list of Show Dahlias. This grand variety has not been, however, so frequently staged in recent years as it was formerly, the average number of times it was set up at the last six exhibitions being thirty-one, against forty-one at the previous six shows. Moreover, only once before since it was first largely exhibited in 1886 has it been as indifferently shown as it was last year; but notwithstanding this decline in favour in recent years, and notwithstanding its poor appearance in 1898, there was no other Show Dahlia to be seen at the last exhibition in as many stands. R. T. Rawlings, the only possible rival to the leading flower, was also indifferently represented. John Walker, too, was not nearly as often staged as usual—in fact, there were but few varieties in this section which appeared in exceptional force. Among these may be mentioned J. T. West, William Powell, Arthur Ocock, Victor, Goldfinder, and Crimson King. On the other hand, the following sorts were not only less frequently staged than usual, but have never before been as sparsely shown at any of the last eight exhibitions:—R. T. Rawlings, W. Rawlings, Colonist, Willie Garratt, Harrison Weir, Shirley Hibberd, Mrs. Morgan, and Prince Bismarck.

In looking through my working tables of comparative records, which now covers the last sixteen National Dahlia Shows, it is interesting to notice how certain varieties become less popular as exhibition flowers as years go on, while a few others either remain stationary, or have been in recent years rather more frequently shown than they were in the early half of the period. I, of course, refer here only to varieties which have been in general cultivation throughout the whole of the sixteen years. Taking, first, those Show

Dahlias which may be regarded as decidedly on the down grade. Among these must be included Henry Walton (1873), Prince of Denmark (1881), Hon. Mrs. P. Wyndham (1881), Goldfinder (1881), Burgundy (1877), John Standish (1872), and Prince Bismarck (1879); while James Cocker (1871), Ethel Britton (1880), and Shirley Hibberd (1881) are nearly as largely grown as formerly. William Rawlings (1881) stands out as unique in that, although sent out as early as 1881, it has been staged more frequently in recent years than formerly, the exact figures being an average of twenty-three times for the last eight years, as compared with twenty-one times for the eight previous exhibitions. How few other florists' flowers are there which will bear a similar examination to the foregoing—taking into consideration the number of varieties mentioned and the length of time over which their records extend.

The progress made in this section is not so great as formerly. For instance, going back six years there are only nine sorts on the list which are less than seven years old, and of these only three find places among the first twenty-five varieties. Of the nine sorts in question, Virginale, sent out in 1893, has risen since last year from No. 48 to No. 39, while Mrs. Morgan, of the same year, has fallen from No. 35 to No. 43. Among the 1894 varieties is found the most promising of all the newer Show Dahlias—Duchess of York. It has not improved on the good position (No. 7) it secured in the previous analysis, but, on the other hand, at each of the last three exhibitions there were only four other sorts as frequently shown. Warrior, another 1894 variety, on its first appearance in the table, secures a place at No. 29, while Chieftain (No. 30) was not quite as well represented as in the previous year. The only 1895 Show Dahlia, Shotesham Hero, no doubt owing to the adverse character of the season, was only staged in seven stands, as compared with eighteen in 1897. The 1896 varieties, considering their youth, already occupy very good positions, Florence Tranter having risen since last year from No. 27 to No. 19 while Dr. Keynes makes its début at No. 26. The only 1897 variety in the table, Daniel Cornish, secures a place at No. 50.

Turning next to the Fancies, we still find that remarkable variety Rev. J. B. M. Camm at the head of the poll. In 1897, although then in its twenty-fifth year, it not only distanced all other competitors, but was to be seen in more stands than at any other show in the sixteen years. At the first eight exhibitions during that period it was staged on an average fifteen times, and at the last eight twenty-one times—which certainly indicates an unusually vigorous constitution, as well as a decided rise than a decline in favour—at all events from an exhibitor's point of view. It was, however, not quite in such

FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1898 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	21.3	18	Rev. J. B. M. Camm.....	1873	Keynes	Yellow and red
2	18.9	23	Duchess of Albany	1884	Turner	Orange and crimson
3	17.5	17	Mrs. Saunders	1872	Turner	Yellow and white
4	16.1	11	Mrs. John Downie	1889	Turner	Orange and scarlet
5	14.0	10	Matthew Campbell	1889	Keynes	Buff and crimson
6	13.5	7	Frank Pearce.....	1886	Rawlings	Rose, striped crimson
7	12.2	6	T. W. Girdlestone.....	1890	Keynes	Lilac and maroon
8	12.1	9	Dorothy	1888	Keynes	Fawn and maroon
9	10.3	14	Buffalo Bill	1890	Keynes	Buff, striped vermillion
10	9.3	9	Emin Pasha	1894	Keynes	Yellow, striped crimson
11	9.1	11	Peacock	1877	Turner	Maroon and white
12	8.1	7	Rebecca	1893	Keynes	Lilac and crimson
13	*8.0	8	Goldsmith	1895	Keynes	Yellow, striped crimson
14	7.8	7	S. Mortimer	1894	Mortimer ..	Rose, striped crimson
15	7.5	2	Comedian	1892	Keynes	Orange and crimson
16	6.4	4	Henry Eckford	1886	Rawlings	Yellow and red
17	6.3	8	Dandy	1891	Keynes	Orange, striped crimson
18	5.5	7	Dazzler	1893	Keynes	Yellow, striped scarlet

* A new variety, the position of which is dependent on its record for the 1898 show only.

good form as usual in 1898. The most successful Fancy last year was Duchess of Albany, which was shown in five more stands than any other variety in this section, and, with two exceptions, Mrs. Gladstone and J. T. West, more frequently than any other Show or Fancy Dahlia in the exhibition. The only other established sorts unusually well represented at that Show were Buffalo Bill, Peacock, and Dandy. On the contrary, the following four varieties, Matthew Campbell, Frank Pearce, Comedian, and George Barnes, have never before been as seldom seen.

There are, as usual, but few new or comparatively new sorts in this section. Going back six years the best placed is Emin Pasha, sent out in 1894, which has risen since last year from No. 11 to No. 10; Goldsmith, an 1895 variety, makes its first appearance in the table at No. 13; while S. Mortimer (1894) and Dazzler (1893) remain respectively as before at No. 14 and No. 18.

In dealing with the Pompons, it will not do to take as long an average as eight years, as we have done with the Shows and Fancies, as the changes in this section are so much greater. Therefore, in arranging the varieties in the select lists which follow, the different

sorts are placed in the order of their respective performances at the last four exhibitions, the newer kinds finding places according to their records at the last exhibition only. The established kinds, which were better represented at the last show than at any of the previous three exhibitions, were Bacchus, Tommy Keith, and Whisper, while Phoebe and Sunshine have never before been as poorly shown. The following varieties, arranged in their order of merit, have proved very dependable and consistent in their records throughout the four years—viz., Bacchus, Tommy Keith, Arthur West, G. Brinckman, Captain Boyton, Whisper, Eurydice, Lilian, White Aster (Guiding Star), and Isabel. Of the newer Pompons the following were as well shown as at the previous exhibition:—Sunny Daybreak (1895), Nerissa, Douglas, and Rosebud (1896).

There is at last some indication of a little more stability in the Cactus Dahlia section, nevertheless the changes are still so great, and there are so many new sorts, that I have thought it best to arrange the varieties in the select list according to their records for the last exhibition only. It may, however, be interesting to many growers to have the different sorts in that list arranged according to their

SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1898 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	32.9	25	Mrs. Gladstone	1884	Hurst	Pale blush
2	26.0	20	R. T. Rawlings	1886	Rawlings	Clear yellow
3	24.4	18	John Walker	1892	Walker	White
4	23.0	12	William Rawlings	1881	Rawlings	Crimson purple
5	22.6	18	Colonist	1887	Keynes	Chocolate and fawn
6	22.4	15	Mrs. Langtry	1885	Keynes	Cream and crimson
7	21.3	19	Duchess of York	1894	Keynes	Lemon, edged salmon pink
8	21.0	18	Harry Keith	1886	Keynes	Rosy purple
9	20.4	23	J. T. West	1887	Rawlings ..	Yellow and purple
10	17.8	17	Arthur Rawlings	1892	West	Deep crimson
11	17.4	17	James Coeker	1871	Keynes	Purple
12	16.1	13	Maud Fellowes	1889	Fellowes	Pale pink, shaded purple
13	15.8	14	Duke of Fife	1890	Keynes	Rich cardinal
14	15.0	16	Henry Walton	1873	Keynes	Pale yellow and scarlet
14	15.0	12	John Hickling	1890	Keynes	Clear bright yellow
16	14.9	9	Ethel Britton	1880	Keynes	White and purple
17	14.8	16	William Powell	1892	West	Primrose yellow
18	14.6	8	Willie Garratt	1887	Garratt	Bright cardinal
19	*14.0	14	Florence Tranter	1896	Tranter	Blush white, edged rosy purple
20	13.9	5	Harrison Weir	1883	Rawlings	Yellow
21	13.5	13	Mrs. W. Slack	1886	Keynes	Blush white and purple
21	13.5	8	Shirley Hibberd	1881	Rawlings	Dark crimson
23	13.2	19	Arthur Ocock	1892	Rawlings	Reddish orange
24	13.1	12	Miss Cannell	1881	Eckford	Cream and crimson
25	12.5	7	Shotesham Hero	1895	Fellowes	White, tipped and shaded rose
26	*12.0	12	Dr. Keynes	1896	Keynes	
27	11.6	12	T. J. Saltmarsh	1885	Rawlings	Yellow and chestnut
28	11.0	10	Prince of Denmark	1881	Fellowes	Dark maroon
29	10.0	10	Warrior	1894	Keynes	Scarlet
30	9.5	9	Chieftain	1894	Keynes	Purplish lilac
31	9.4	8	Majestic	1890	Keynes	White, edged purple
32	9.2	9	Perfection	1889	Fellowes	Orange buff
32	9.2	16	Victor	1887	Keynes	Dark maroon
34	9.0	6	Hon. Mrs. P. Wyndham	1881	Keynes	Pale yellow and rose
35	8.9	7	George Rawlings	1882	Rawlings	Dark maroon
36	8.6	13	Goldfinger	1881	Fellowes	Yellow and red
37	8.4	7	Glowworm	1889	Turner	Bright orange scarlet
38	8.3	7	Mrs. D. Saunders	1888	Rawlings	Pale, edged rose
39	8.0	8	Virginale	1893	Keynes	Blush white, edged pink
40	7.8	5	Mr. Glascock	1886	Rawlings	Purple
41	7.6	10	Crimson King	1887	Keynes	Deep crimson scarlet
42	7.4	6	William Keith	1888	West	Dark plum
43	7.3	4	Alice Emily	1890	Keynes	Buff yellow
43	7.3	3	Mrs. Morgan	1893	Fellowes	Pale ground, tinted rosy purple
45	6.8	3	Queen of the Belgians	1887	Rawlings	Cream and pink
	6.6	3	Burgurdy	1877	Turner	Dark puce
46	6.6	4	Earl of Ravensworth	1883	Harkness	Lilac
48	6.3	4	John Standish	1872	Turner	Crimson
48	6.3	3	Prince Bismarck	1879	Fellowes	Puce
50	*5.0	5	Daniel Cornish	1897	West	Terra cotta

* New varieties, the positions of which are dependent on their records at the 1898 show only.

relative positions in the series under the years of their introduction. 1894, Lady Penzance, Matchless, and Gloriosa; 1895, Earl of Pembroke, Harmony, Mrs. Barnes, Mrs. A. Beck; 1896, Fusilier, Beatrice, Mrs. Wilson Noble, Miss A. Nightingale, J. E. Frewer, Mrs. Montefiore, Miss A. Jones; 1897, Starfish, Cycle, Charles Woodbridge, Cinderella, Harry Stredwick, Fantasy; 1898, Mary Service, Keynes' White, Night, Arachne, Britannia, Island Queen, Alfred Vasey, Regulus, Casilda, and Daffodil.

In the Single flowered section the positions of all the varieties, except the newer ones, are dependent upon their average records for the last three exhibitions.

The varieties in the following select lists which are marked with an asterisk are sorts sent out in 1897 or subsequently.

POMPONS.—Bacchus, Nerissa, Tommy Keith, Dr. Jim,* Arthur West, Phoebe, Captain Boyton, G. Brinckman, Whisper, Emily Hopper, E. F. Juuker, Sunny Daybreak, Eurydice, Douglas, Lillian, Orpheus*, Rosebud, Ganymede,* Sunshine, Mars, White Aster (Guiding Star), and Isabel.

CACTUS.—Starfish,* Cycle,* Lady Penzance, Fusilier, Beatrice, Earl of Pembroke, Mary Service,* Mrs. Wilson Noble, Harmony, Keynes' White,* Charles Woodbridge,* Cinderella,* Matchless, Night,* Arachne,* Harry Stredwick,* Britannia,* Miss A. Nightingale, Mrs. Barnes, Gloriosa, Island Queen,* Mrs. A. Beck, Alfred Vasey,* Fantasy, J. E. Frewer, Mrs. Montefiore, Regulus,* Casilda,* Daffodil,* and Miss A. Jones.

SINGLES.—Victoria, Polly Eccles,* W. C. Harvey, Demon, Naomi Tighe,* Miss Roberts, Phyllis, Beauty's Eye, Northern Star, Folly,* Jeanette,* Alice Seale, Jack Sheppard, The Bride, Amos Perry, Formosa, May Sharpe, Miss Glasscock, James Scobie, Guliehna, and Miss Henshaw.—E. M., *Berkhamsted*.

STOCKS FOR FRUIT TREES.

THE subject of the stocks that the various fruits are worked on, and on which so much depends for success in fruit culture, is a matter admitting of a great amount of controversy, and wide divergence of opinions may be expressed by practical men in the effort to solve the problem—of what particular varieties of fruits to work on certain stocks for producing the best all round results in productiveness and vitality.

We will take the Apple first, of which there are only two stocks in general commercial use in this country—i.e., the Crab and Paradise, commonly known as the Free and the Dwarfing stock; but in France they also use the Doucin, the French Paradise (Pommier de Paradis), and the Jeanne de Metz Paradise, all of which are chiefly propagated from cuttings.

I have tried the Doucin and French Paradise, but find them worthless for our climate. Our wild Crab is undoubtedly what we have to depend on to the extent (if I may venture a guess) of at least 90 per cent. of the whole of the Apples that are worked in this country, the Paradise being only used as a dwarfing stock for certain varieties of Apples to be grown in the form of bush trained trees. It is claimed for this stock that it brings the trees into an early fruit bearing state, but I am afraid there are many varieties made to feed on this stock, which practical knowledge of their constitutions cannot justify.

For instance, what possible benefit can the bulk of the Codlin class derive by being compelled to vegetate on a stock weaker than themselves? They are, generally speaking, weak in wood and prolific in fruit, and require the strongest body for their support. Then we have the weakest growers and the shyest bearers among the best dessert Apples, such, for example, as the Irish Peach, and Cox's Orange Pippin. What possible or permanent advantage can be expected for such by association with the dwarfing stock? It is true you may induce fertility on the one hand, but at the expense of greater weakness on the other, for as you sow you must reasonably expect to reap.

There are Apples which are materially benefited by co-operation with the Paradise stock, and they are the rampant growers. The chief recommendation for this stock is, however, for fancy gardening, where space is limited, and the Paradise will never become a successful competitor with the Free stock in supplying our markets from the great fruit plantations and orchards of this country.

I am a great advocate for what is known as the double working of the Crab stock; that is, to first work on it the strongest growers, such as Bramley's Seedling, on which afterwards bud the weaker sorts; and in converse manner for all strong growers and shy bearers to be budded the second time on such prolific sorts as Stirling Castle; and further, when you come to deal with weak growers and shy bearers only, work them on the body of the strongest and most prolific

bearers, such as Lord Grosvenor, as possessing great vitality with free and heavy cropping propensities.

In this double working you set up two distinct bodies, dependent on the Free stock for their existence, and the question may be asked, Will such co-operation interfere with the quality or flavour of the fruit? There has been much discussion in our gardening journals on the relation of scion to stock, but I maintain that it has never been satisfactorily proved that the stock of the Apple, Pear or Plum, exerts any influence whatever on either the quality or flavour of the fruit.

My contention is that as soon as the scion is in active life the stock is simply reduced to a passive agent in the distribution of strength, and the tree that grows thereon will only seek for such food as is essential to its natural requirements. I therefore maintain that the stock, deprived as it is of maturing its own wood and foliage, is rendered harmless to deteriorate, improve, or in any way influence the quality of the fruit.

In Pears we have only two stocks—the wild Pear and the Quince, known also as the Free and Dwarfing stock; and the practice of double working is probably more extensively carried out with Pears than with Apples; especially is this so in France, and I believe with a considerable amount of success.

Cherries also only possess two stocks—the wild and the Mahaleb, the wild or Free stock being chiefly used for standards, and the Mahaleb or Dwarfing stock for bush trees. The last named is closely allied to the Bird Cherry, and has the advantage of growing freely on very poor soil, also of starting into growth fifteen days later than the wild Cherry—a great point in its favour, on account of the trying weather often experienced when earlier trees are in bloom.

In Plums we have a long list of stocks, but those chiefly used in this country are the St. Julien, the common Plum, the Mussel, and the Myrobalan. The St. Julien is closely allied to the common Plum, and is a good stock on which to work the Myrobalan, to make stems to support Peaches, Apricots, and Nectarines established on them in the production of standards for training. The Mussel and common Plum are much less used now than formerly as stocks.

The Myrobalan seems to have come to the front, and probably 80 per cent. of Plums are worked on this stock—indeed, we use it entirely for both Plums, Apricots, Peaches and Nectarines, and find it answers better than any other, on account of its strong clean habit of growth and great freedom from gumming. It is a native of Europe and North America, and has been cultivated in this country for an unknown period.

This is the stock about which so much has been heard during recent years. It was announced as superseding our White Thorn for hedges. This I hold to be a delusion, and as a practical person cannot recommend it for that purpose.

I must not omit to mention the natural Peach and Apricot stocks, both of which are no doubt extensively used in the southern parts of Europe and America, but rarely worked in this country on account of their tendency to gum, and probably they are only at home when growing in the hottest and driest regions, and therefore useless for the British climate.

[An interesting and suggestive paper; but we know of some nurserymen who discriminate between stocks raised from the true Crab and those raised from mixed varieties of Apples, and known as "Free" stocks. These are raised from the pips of cider Apples chiefly, and are much more variable and more numerous than those raised from seeds of the Crab. The variation in stocks raised from the seeds of cultivated Apples is admitted by Mr. T. Lambert in his reference to those of the Codlin class. We know of highly profitable plantations of bush grown Apples on the "Free" stock, as well as on the English Paradise. We have also seen dwarf and productive bushes on the Crab when the seedlings have been specially treated, as, for instance, by Mr. Crump at Madresfield Court. We had in view the apparent circumstance of stocks not affecting the flavour of fruit that led us, on page 259 (March 30th), to ask for an explanation of the reason why Apples on the Northern Spy stock should be free from the American blight, while the same varieties on other stocks were devoured by the pest. Mr. A. H. Pearson referred to this matter on page 298 (April 13th), intimating that Apples on the Paradise are almost exempt from attacks, whilst those on the Crab will suffer severely. We should like to know what Mr. Lambert has to say on this subject. We did not know, and scarcely think that 90 per cent. of Apple trees raised in this country are worked on true Crab stocks.]

THYRSACANTHUS RUTILANS.—Few plants are more graceful and useful for indoor decoration during the winter and spring than *Thysacanthus rutilans*. Its long tubular flowers show to great advantage when the plant is used for the table. It is easily grown and lasts a long time in bloom, these attributes being sufficient to merit a place for it in every collection of plants. There is perhaps no other plant which possesses quite the same pleasing drooping habit when in bloom, and in these days, when small, graceful specimens are so much in request, the *Thysacanthus* would prove a boon to many who have to provide for table decoration.—H. P



A FLORIFEROUS CYPRIPEDIUM.

IN our issue dated January 26th of this year, page 61, we published a brief note under the above heading, which had been written by Mr. J. Dawson of Rangemore. Our correspondent now supplements those remarks with a photograph, from which the illustration (fig. 73) has been engraved. At the same time Mr. Dawson writes:—

"The *Cypripedium* referred to was raised in these gardens, and is the result of a cross between *C. bellatulum* and *C. venustum*, the latter being the seed parent. The plant is about five years old, and is now growing in a 5½-inch pot. The usual number of flowers borne on one stalk is two or three; all, as a rule, open simultaneously. It is a very vigorous grower."

The name of *Venubel* has been given to it, and no one will doubt that it is a vigorous grower when one knows that five flowers out of the six produced were expanded at one time, all of which can be seen in the illustration. The spike may be a fasciated one, but even then the number from one spike is exceptional, and it will be interesting to watch the plant's procedure in the future, and we hope Mr. Dawson will let us know, if he can, how the plant flowers next season.

CYPRIPEDIUM INSIGNE HAREFIELD HALL VARIETY.

THIS gigantic form, which was exhibited by the owner, E. Ashworth, Esq., at the Drill Hall at the last meeting in 1898, and of which a fine cut was given in the *Journal of Horticulture* on January 5th of the present year, is probably unequalled for size. But as showing how near some of these forms approach each other, I may mention that I recently saw flowering with Messrs. Hugh Low & Co. of Bush Hill Park, a form with flowers very nearly approaching it, and equally fine in build and colour. There is no doubt that many grand forms of this old species have long been in cultivation, but in out-of-the-way places where their merits have not become known.

ALBINO CATTLEYAS.

Nothing in pure white Orchids is so chaste and beautiful as are the white forms of the various Cattleyas, and few even of the rarest are more prized by their fortunate owners. Though in visiting exhibitions of Orchids, such as the Temple Show and the meetings of the R.H.S., these white forms are frequently seen, it is surprising what a number of plants may be handled before an albino turns up. Many of a washed-out looking, pinky white tint flower out of almost every importation, but these are far inferior to good coloured varieties, and do not merit the attention given them.

One of the most chaste, rarest, and unfortunately most difficult to grow, is flowering just now—viz, *C. intermedia alba*. The blossoms are absolutely white, and the habit is shorter than that of the type. Among the labiata kinds are many of these white forms, most of the best-known species having their albino. The white *C. Mossiae*, for instance, is a lovely plant, while *C. Trianae alba* is not less so. This latter is one of the best known of the white forms, having appeared as often as any. The old *C. labiata autumnalis* has produced its white form, and, like others, there are varieties with white sepals and petals, and various markings on the lip.

DENDROBIUM SUBCLAUSUM.

This will probably never become a very popular plant, as the genus contains too many good things for a newcomer of this class to make much headway. Yet it is not without beauty, and it is distinct enough from all other *Dendrobiums* to suit the most exacting in this respect. It is being tried as a pollen parent with some of the showier sections, and it is quite probable that some distinct hybrid forms may be raised by its aid; the colour, a bright orange red, being very unusual in the genus, and having been found very potent in other genera, as witness *Laelia harpophylla*, and *L. cinnabarina*.

DENDROBIUM BRYMERIANUM.

In the rush for novelties among *Dendrobiums* this beautiful species seems likely to be forgotten, as those who have it do not seem to think it worth showing. As a matter of fact few are more worthy of care, the finely fringed lip and its bright golden yellow colour being quite distinct from every other. The plant is an evergreen, but of different habit to most other evergreen species, the nearest to it being *D. fimbriatum*. The roots are very strong and vigorous, and young plants are freely produced on the tops of the older stems, thus forming a ready means of propagation. Taken off and placed about half a dozen

in a pot or basket, they make nice plants much quicker than old divided up specimens. The plant should be purchased in flower when possible to secure a good form.

PHALÆNOPSIS LOWI.

I recently noted a number of plants of this pretty species, and so finely were they pushing up that I asked for particulars as to their culture. As I anticipated, they were only in their third year, and therefore had been growing in this country just long enough to get thoroughly established while yet retaining much of their innate vigour. Beyond this the culture was similar to that advised in the *Journal of Horticulture* on several occasions. Personally I have always found that plants which seem to take naturally under cultivation to the deciduous habit noticed in their native country are the longest lived and most satisfactory.

But it will not do to force this rest upon plants that do not take it naturally. If sufficiently dried to lose their foliage the probability is that the last has been seen of it, or at all events the ensuing season's growth will be such that the experiment will not be tried again. As to compost, the less the better. A little clean sphagnum moss about rough blocks of apple or teak wood is ample for the strongest plant.

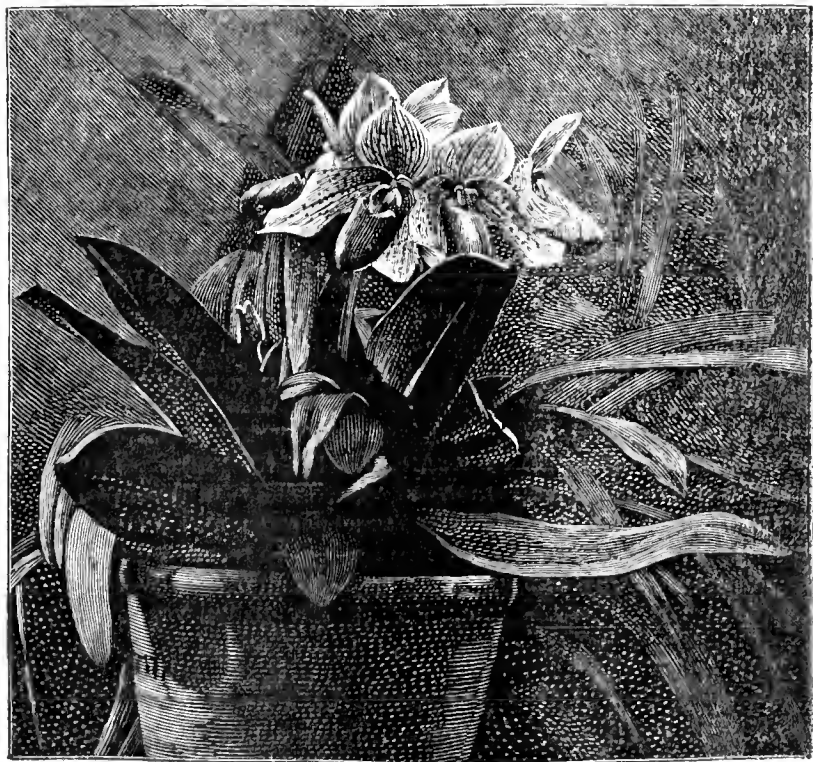


FIG. 73.—CYPRIPEDIUM VENUBEL. (Six flowers on one spike.)

By all means sink these blocks into pots of moss and charcoal if convenient, as a few adventurous roots may find their way to it, and if so they will strengthen the plants materially. If they do not, the moss being about the blocks will keep the latter moister, and this of itself is an advantage.—H. R. R.

SPRAYING FRUIT TREES.

REFERRING to Mr. Jno. Miles' article on page 272, April 6th, in *Nova Scotia* $\frac{1}{2}$ to 1 lb. rock or crude caustic potash is commonly used, both for spraying Apple trees before leafing and painting tree trunks for scale, &c., any time during the year. I have myself used potash up to 1 lb. per gallon on tree trunks, but I think this is unnecessarily strong.

In one of the best young orchards I saw in Nova Scotia the stems of the Apple trees had been yearly washed with $\frac{1}{2}$ lb. potash to 1 gallon of water. I do not think this is too strong for last year's growth, though for economy a weaker solution might be used.

This spring on the farm I have sprayed Apple and Plum trees of all ages with $\frac{1}{2}$ lb. potash to 1 gallon of water. I bought 1 cwt. of crushed caustic potash, highest strength 96 to 98 per cent. of potash, at 5½d. per lb. I would, however, have preferred American rock potash as being less expensive, but the package was too large for my requirements, and I do not think so pure a potash is necessary as the one I used.

Wide-brimmed straw or rush hats are used in Canada for spraying, costing about 5d. I did not see or hear of any other protection for the face employed. In case of a dose in the face I should advise lathing it at once in water and applying olive oil or grease without salt. The veil seems a good idea. I know the strong solution is rough on the hands unless protected by indiarubber or thick leather gloves.—C. H. HOOPER.

EXPERIMENTAL HORTICULTURE.—2.

(Continued from page 271.)

IN Germany experimental work is carried on extensively, but chiefly in connection with agriculture. There are fifty-four such stations, besides numbers of chemical laboratories, where analyses of soils and products can be obtained by farmers or others; but Dr. Voeleker informs me that in few cases does horticulture receive much attention, though there is one important establishment at Geissenheim, near Bingen on the Rhine, which, besides being a kind of national school of horticulture, is also devoted largely to fruit culture in demonstrative or experimental work.

In other European countries something is done in experimental work, especially in Switzerland and France. The total number of stations on the continent, Professor Warrington tells us, is 190, besides 120 laboratories.

At Versailles, near Paris, is a national school of horticulture, though little elaborate experimental work is done there, and the same remark applies to the 30,000 school gardens in France, useful as they undoubtedly are for demonstration and instruction.

In some of our colonies a few stations are established, especially in Australia and New Zealand, but there is little of a systematic or general character.

BRITISH EXPERIMENT STATIONS.

Coming to Great Britain, in which both agriculture and horticulture is of so much importance, we find that the State has done nothing in aid of experimental work. Whatever has been undertaken has been at private expense, by local bodies, or by societies, and it has thus wanted the uniformity of organisation so necessary in work of this kind. There is an institution, however, which, though devoted solely to agriculture, deserves a few words in these remarks, because it is a model of experimental organisation and patient, continuous research that stands unrivalled. I refer to Rothamsted, in Hertfordshire, where Sir John Lawes and Sir Henry Gilbert have conducted a most elaborate series of manuring and cropping experiments, the records of many of which now extend over fifty years. The work was commenced in 1834, and more systematically in 1843, so that the results of a long period under the same system and management are now available for comparison. The system of recording results is also very thorough, and some idea may be formed of the work when it is stated that 45,000 bottles of experimentally grown vegetable produce, animal products, and soils or ashes, are now stored in the laboratory. Sir John Lawes has not only maintained this great institution at his own expense, but has further most munificently devoted a sum of £100,000 to continuing the work after his death, the matter being vested in trustees and a committee of management.

Another institution, framed on a similar basis, is the Experimental Farm at Woburn, established by a former Duke of Bedford, and carried on by the Royal Agricultural Society under the direction of Dr. A. Voeleker. There some twenty years of valuable work has been performed, and the chief records have been recently made available in a condensed form.

COUNTY COUNCILS.

Some of the County Councils have commenced experimental work on a small scale, but it seems that they might well devote more of their energies and finances to such purposes, with great prospective advantages to their districts. In Wiltshire, for several years experiments have been well conducted in the Warminster district in connection with Potatoes, manures, spraying, size of sets, and wide planting being dealt with very carefully and thoroughly. The results have also been published in a convenient form. In Essex, experiments have been commenced in relation to manurial trials and other matters concerning agricultural crops, and, the *Journal of the Technical Laboratories at Chelmsford*, edited by Mr. D. Houston, F.L.S., gives the results of these in a series of reports and special articles.

At Droitwich, in Worcestershire, an experimental and trial garden has been established under Mr. James Udale, the chief Instructor in Horticulture for that county, and the report issued at the end of the year showed how comprehensive and useful such horticultural stations can be rendered in good hands.

In Derbyshire experimental fruit stations are established in certain districts. All the more useful varieties and forms of trees are grown in the best manner in which the soil and situations permit, and demonstration lectures given to visitors who attend, by Mr. Edward Luckhurst.

Amongst all the County Councils Surrey stands pre-eminent in the attention devoted to horticulture, and has developed a system which is admirable in every respect from an instructional point of view. This has taken the form of establishing continuation school gardens where, under the direction of qualified local teachers, the boys are encouraged to learn the best methods of treating the principal

garden crops. As both manures and seeds are supplied, it is obvious that such gardens can be rendered partly experimental as well, and I believe this is done to some extent under general supervision. There are no less than 370 plots in thirty different districts, and during the past year 5000 distinct crops have been raised, affording great scope for observations. In connection with this work the chief instructor says:—

“Every year experience proclaims more clearly that there is more virtue in deep culture and soil division, with frequent hoeings for weed prevention, and the incorporation of good natural or farmyard manures for imparting humus and holding moisture, than is found in the application of chemical manures alone, and apart from good manipulative work. Given this work, and natural manure, a supplement of wisely chosen artificials may be profitably applied to some soils and crops, but unless they are used with knowledge—which cannot well be had without actual experience—nothing is more easy than to waste money by investing largely in them.”

In addition to the school gardens trials of selected varieties of Peas, Potatoes, Kidney Beans, Carrots, Onions, and Beet are conducted in large groups of allotments, in order that the allottees may see for themselves what are adapted for the particular site and soil, and the resulting produce is used in the school gardens. This method is considered more directly useful to large numbers of workers, and also more economical than having an extensive trial in one district alone, where the soil cannot be the same as that which of necessity differs so much in the various allotment stations.

One trial of Potatoes was, however, of wide scope, as the same seventy varieties were grown in soils widely differing in character. As a result 220 dishes were arranged in the Public Hall, Carshalton, and from these thirty varieties were chosen as being suitable in size and shape for use. These were cooked by a County Council expert, with the results published, but a brief digest can only be given here. “For *quality* Goldfinder, Supreme, and Satisfaction were the best from dark boggy soil: Windsor Castle, Satisfaction, and Renown from clay soil; Supreme, Satisfaction, and the Bruce from dark sandy soil; Colossal, Satisfaction, and Windsor Castle from chalky soil; Challenger, Chancellor, and Duke of York (early) from sandy peat soil; Future Fame, Satisfaction, and Best of All from gravelly soil; Triumph, Satisfaction, and Windsor Castle from marly soil; Victory, Early Regent, and Dean's Renown from loose sand; Triumph, Victory, and Satisfaction from strong loam; Puritan (early), Windsor Castle, and Dean's Renown from dark porous soil.” Such practical work as that indicated in these notes must appeal strongly to all who are concerned in the advance of gardening.

Continuation school gardens are numerous in Kent, and more is done for allotment holders than in any other county by the giving of prizes for the best plots. The work is carefully estimated, and a penny a point given to those men who obtain above a certain specified number that is considered to represent creditable work. This is probably the simplest and best method of allocating such prizes that has yet been devised.

In Northumberland I understand an experimental farm has been established under the direction of Dr. Somerville, and in a few other counties some efforts are being made in a similar direction. For instance, in the Isle of Wight a small experimental garden is being formed, under the management of the horticultural instructor, Mr. S. Heaton; and I am informed that youths and adults are taught the principles and practice of gardening in Shropshire. Some of the agricultural colleges and farmers' societies also carry out experiments of various kinds, but necessarily in an isolated, and in some cases in a fragmentary way.

CHISWICK.

Amongst strictly horticultural institutions, established and carried on by societies, honourable mention must be made of the Royal Horticultural Society's garden at Chiswick, where for a long period useful work has been performed in the trial of varieties, and in experiments with stocks and other ways. It must be a subject of regret, however, that the funds of this Society have never seemed to permit its garden to be developed on a wider basis. There has been no lack in the administrative skill, for the R.H.S. has been fortunate in procuring able secretaries and superintendents, while its councils and committees have included the foremost horticulturists of the day throughout the present century; therefore it is to financial difficulties of many years that we must look for the explanation of the fact that experimental work has not been more extended. There is no question that the R.H.S. has rendered more service to horticulture during the present century than any other organisation, and in recent years its usefulness and finances have been so much increased that we may hope for still further improvement. More light is needed on many difficult problems, and it will only be by the multiplication of experimental stations and the accumulation of accurate records that systematic and reliable data can be furnished.—R. LEWIS CASTLE.



RECENT WEATHER IN LONDON.—Though we have had some bright weather of late the nights have proved very cold, either from winds or frosts. On Sunday evening rain fell rather heavily for some time, but Monday and Tuesday it was dry, though the latter day was very dull at intervals. On Wednesday it was fine, with a pleasant breeze.

— WEATHER IN THE NORTH.—For the fortnight ending the 17th inst., the weather has been highly unfavourable to vegetation. Piercing northerly winds have been continuous, and sharp frosts of from 4° to 6° have occurred almost nightly. From some northern counties pretty heavy snowfalls are reported, and 12° frost from a county well to the south. The night of Sunday was keen, 6° frost were recorded, and all the north hills are for some time white near to their bases.—B. D., S. Perthshire.

— ROYAL GARDENERS' ORPHAN FUND.—We have much pleasure in announcing that Sir Reginald Hanson, Bart., M.P., has kindly consented to preside at the annual dinner of this Charity, which will take place at the Hotel Métropole, on Tuesday, July 18th.

— SOWING PARSNIPS AND OTHER ROOTS.—There is no accounting for the action of many growers who sow their root crops, especially Parsnips, weeks before there is any need. The ground may be in the worst of order, and the weather quite unfit, yet they think something very untoward has happened unless the Parsnip seeds are in with the early Broad Beans. Beet, again, is often sown far too early, the consequence being that the roots grow very large, and are wanting both in colour and flavour. By all means sow a drill or two of either for an early crop, but as soon as the main crop comes in, the remainder, if any, of the early ones may as well be thrown away, for there is no question about the difference in quality of the late sown roots. From seeds sown in April Parsnips prove a most useful vegetable, as does Beet when sown in May.—C. H.

— SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.—The bulletin of this estimable Society has just reached us, and we find its gross of pages full of matter that is always interesting, and, in many cases, instructive. Details are given of the several meetings that were held in the past year, with a special report of the annual dinner which took place in January under the presidency of Mr. K. Drost. This function seems to have been one of the most successful within the existence of the Association, due not alone to Mr. Drost, but also to Mr. Geo. Schneider and his energetic co-workers. From a practical point of view the value of the publication lies mainly in the several articles on various plants and flowers. Young Frenchmen resident in England who are not in communication with the Society should write to the Secretary, Mons. Roger Bréauté, 20, Bedford Street, Strand, London.

— ROYAL BOTANIC SOCIETY.—The following medals and certificates were awarded for miscellaneous exhibits and meritorious plants at the exhibition of this Society, that was held on Wednesday, the 12th inst.:—Large bronze medal to Messrs. A. W. Young & Co., Stevenage, for Chivias and Pelargoniums; large silver medal to Messrs. J. Laing & Sons, Forest Hill, for flowering and foliage plants; large silver medal to Messrs. B. S. Williams & Son, Upper Holloway, for Orchids and foliage plants; large silver medal to Messrs. Hill & Sons, Edmonton, for Ferns; large silver medal to Messrs. J. Carter & Co., High Holborn, for Cinerarias; large silver medal to Messrs. W. Paul and Son, Waltham Cross, for Tulips and flowering plants; silver medal to the St. George's Nursery Co., Hanwell, for Cyclamens; small silver medal to Messrs. Barr & Sons, Covent Garden, for Narcissi; silver medal to Mr. W. Rumsey for Roses; silver medal to Messrs. Hogg and Robertson, Dublin, for Narcissi and Tulips; large bronze medal to T. S. Ware, Ltd., Tottenham, for Narcissi and flowering bulbs; bronze medal to Messrs. Morle & Co., Finchley Road, for Mignonette and Acers; and large bronze medals to Mrs. Vince, Leighton; Mr. Prewett, Rayleigh, for table decorations. Floral certificates were accorded to Messrs. W. Paul & Son for Camellia Dr. Balthazar de Mello and single Tulip Queen of the Netherlands; and to Messrs. Barr & Son for Narcissus Duke of Bedford. A botanical certificate was granted to Messrs. B. S. Williams & Son for Cymbidium Devonianum and Phaius Normani.

— SPRING VISITORS.—Swallows were first seen here on Saturday the 15th, and the cuckoo was heard on the 16th. Last year the dates of these were the 4th and 17th of April respectively. The nightingale, which was heard on the 14th last year, has not up till this date yet made its appearance. We cut our first 100 Asparagus out of doors on the 12th. Last year it was cut on the 11th, so there is not much difference in the season.—C. ORCHARD, Bembridge, I. W.

— BRUNFELSIA EXIMIA.—Grown as a pot plant, this usually presents a more or less stunted appearance, due to its habit of producing a large quantity of flowers at the expense of growth. When planted out, however, more growth is made with better foliage, and the flowers are borne quite as abundantly as in the former case. The flowers are produced from the tips of the shoots during spring and early summer. They are rather more than 1½ inch across, deep purple when they first open, becoming paler as they age, and sweetly scented. For planting out in an intermediate house it is excellent, flowering very freely, and being showy. A mixture of peat and loam, with plenty of sand added, and a well drained border, is all that is necessary to insure success. It is a native of Brazil, and a figure of it may be seen in the "Botanical Magazine" (t. 4790).—D. K.

— TORQUAY GARDENERS' ASSOCIATION.—Though only seven years old this Society is a very flourishing one, and has done much useful work in disseminating horticultural knowledge in the district. The essays that are read at the meetings are invariably of a useful character, as readers of the *Journal of Horticulture* will be aware, as we have from time to time published more or less lengthy extracts from them. At the recent annual meeting when the Committee's report was presented the stability of the Association was commented upon, and from the balance-sheet we are pleased to see that the amount in hand is greater than it was last year. The Hon. Secretary, Mr. F. C. Smale, Isaline, Avenue Road, Torquay, is indefatigable in his endeavours to maintain the status of the Society.

— "FAMILIAR WILD FLOWERS."—Many readers of the *Journal of Horticulture* will have taken this work in its earlier editions. There will, however, be numbers of young gardeners to whom it is unknown, and now that Messrs. Cassell & Co. are republishing it the opportunity should be grasped of adding it to the library. It will be completed in twenty-five parts, for each of which the price will be sixpence, and of these three, containing thirty coloured plates, are now before us. The author, Mr. F. E. Hulme, F.L.S., F.S.A., has dealt with his subjects concisely, yet withal instructively, and the work cannot fail to be of value to the diligent reader. The sections ready contain admirable representations of the Field Convolvulus, Field Rose, Meadow Cranesbill, Silverweed, Apple, Borage, scarlet Poppy, Arum or Cuckoo Pint, Sweet Violet, Primrose, Hyacinth, Dandelion, Bulbous Crowfoot, common Orchis and Broad-leaved Garlic, yellow Iris, red and white Dead Nettle, Goldilocks and Water Ranunculus, Periwinkle, Lesser Celandine, Harebell, Bush Vetch and Sweet-scented Vernal Grass, Storksbill, Bramble, Honeysuckle, Valerian, Small Knopweed, Cowslip, Toadflax, pink Persicaria, Tormentil and Cinquefoil. "Familiar Wild Flowers" may be obtained through any newsagent or bookseller.

— PINCHING FRUIT TREES—A QUESTION TO ANSWER.—The question is this, Can any practical readers of the *Journal of Horticulture* prove that the pinching or stopping of the shoots of fruit trees will produce large healthy fruit buds on trees so pinched earlier than trees that are not pinched? I have been a grower of hardy fruits for more than twenty-two years. I have done the pruning myself, and taken deep interest in the growth of the trees, but I have never been able to prove that pinching produced fruit buds on the current year's growth capable of producing large healthy flowers. The best test would be to plant one dozen Apple or Pear trees, in six varieties, all worked on the same kind of stock, all the trees to be carefully planted with their roots near the surface on a plot of well-prepared ground. After the trees have become established and growing freely, let one of each variety be pinched in the orthodox way, to form fruit buds, allowing the other six to grow unpinched, but removing useless crowded growths, to enable the foliage to obtain abundance of sun and air for the maturation of the leaves and wood; also taking out the points of the very strong shoots that are robbing the weaker. Pinch away at the first six trees as much as you like. My opinion is that the six trees merely pinched for training will produce more and better fruit in six years after planting than the six trees will that have been systematically pinched for manufacturing fruit buds. Many varieties will produce fruit buds on the current year's growth of both Pears and Apples when their roots are in a proper medium without pinching or stopping in any way.—GEO. PICKER.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Temperature of the Soil. At 9 A.M.				Lowest Temperature on Grass.
		At 9 A.M.		Day. Night		Rain.				
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
1899.										
April.										
Sunday .. 9	W.N.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday .. 10	S.W.	45.8	42.6	51.1	34.5	0.30	45.5	47.2	46.5	24.5
Tuesday .. 11	N.N.W.	51.8	51.6	59.8	43.9	0.25	47.8	46.9	46.5	42.2
Wednesday 12	W.	42.9	40.7	47.6	40.1	0.02	47.8	47.4	46.5	28.5
Thursday 13	S.E.	41.5	37.8	51.5	30.9	0.05	45.5	47.2	46.8	23.5
Friday .. 14	W.N.W.	43.0	41.9	49.5	38.9	0.22	46.3	47.1	46.8	31.5
Saturday 15	W.N.W.	42.7	41.5	47.1	41.0	0.12	46.5	46.8	46.8	38.1
		45.8	43.1	51.9	40.6	—	46.2	46.8	46.8	35.5
						Total				
MEANS ..		45.2	42.7	51.6	38.6	0.96	46.5	47.1	46.7	32.0

A dull and almost sunless week, with cold winds and much rain.

— **THE NEW PENNY PAPER.**—We have been requested to say what we think of the "Gardener," that was advertised in our columns a few weeks ago. After looking through copies which we received from the publisher too late for reference last week, we have no hesitation in stating that, in our opinion, the new comer supplies good value for money, and is likely to make its way in the world. It has already, we have no doubt, found its way into the hands of persons who have not hitherto read a gardening paper, while two of our friends say they regard it as a good auxiliary to the *Journal of Horticulture*. There is so much to be said on gardening, that no paper can say it all, and we believe there are plenty of readers for all that can be said on various points, and in various ways, on the peaceful art, which is always growing, in our garden-loving country.

— **CAMBRIDGESHIRE HORTICULTURAL SOCIETY.**—For upwards of threescore years and ten has this Society been in existence, and yet the fact that it is this season holding three distinct exhibitions proves that it has not lost the vigour of youth. The first show is fixed for June 13th, when the classes number over six dozen. It is on this date that special prizes, open to all comers, are accorded for Roses, 10 guineas being offered in three prizes for thirty-six distinct varieties. On September 7th there are classes for plants, flowers, fruits, and vegetables, Dahlias occupying a conspicuous position. The third and last show comes on November 8th and 9th, when the Chrysanthemum will reign supreme. In an open class for thirty-six Japanese, distinct, £12 is offered, and for twenty-four incurved, in not less than eighteen varieties, £6 is allotted, there being three prizes in each instance. Mr. Arthur Matthew, 20, Trinity Street, Cambridge, is the Hon. Secretary, and from him schedules, entry forms, and other necessary information can be obtained.

— **WEATHER AND CROP PROSPECTS IN GUERNSEY.**—An uneventful winter, broken only by the awful disaster to the s.s. "Stella," the day before Good Friday, which has cast a cloud of sorrow over the Channel Islands, has kept me silent longer than usual. The weather, on the whole, excepting for about a fortnight early in March, has been very mild. On Friday and Saturday, 7th and 8th of this month, there came a severe gale of wind, which did great damage to the Daffodils and other flowers. Now the weather is of a typical April character—showers and sunshine. Our winter crops of Broccoli and Radishes have been anything but satisfactory, Broccoli heads being generally very small, but that of good quality has realised fair prices. Greenhouse Potatoes are running very small in size, and crops are, on the average, light, the almost entire absence of sun during the months of December, January, and the early part of February being much against their growth. The same cause has operated, to a great extent, on the crops of French Beans and Peas, the later sowings having done much the best. The early Daffodils have been fine, and have, considering the quantity both here and in the Scillies, sold at very fair prices. The Ornatus, just coming out in their full beauty, have suffered most from the effects of the gale. The prospects of the Tomato crop in the heated houses are, so far, very good, plants generally looking the picture of health, and with fruit well set. A few parcels have already been sent to England, but picking will not be general for about another fortnight or three weeks. The genial rain we have had, lately has done great good to all outdoor crops, which have now got a good start. There is a very abundant show of Pear blossom. Plums and Cherries are little grown here.—X.

— **GARDENING APPOINTMENTS.**—Mr. Frederick Bulford has been appointed gardener to Sir G. J. Dashwood, Bart., Kirtlington, Oxford; Mr. Alfred Smith in a similar capacity to J. Jaffray, Esq., The Skilts, Studley, Warwickshire, both of whom have lately been foremen under Mr. A. D. Christie at Ragley Gardens, Alcester.

— **FOR CRICKETING GARDENERS.**—We read in a London daily that at Boreham, near Chelmsford, hard by the fertile stream of the Chelmer, a red Willow tree was planted in 1835. In a little over sixty years this tree, which has recently been felled, was found to weigh 11 tons; it was 101 feet long and 5½ feet in diameter. Messrs. Warsop and Son, of St. John's Wood, were the purchasers, and made 1179 cricket bats out of the "prime" cuts. One of our young "Graces" says it is a pity the tree did not grow cricket balls as well.

— **POISONOUS PLANTS.**—The Consulting Botanist of the Royal Agricultural Society has just presented a report to the Committee dealing with the danger to animals and stock which arises from poisonous plants growing on or near pasture land. The familiar Buttercup comes under the ban as "a worthless and dangerous weed," all its varieties being more or less acrid, and farmers are warned that it should not be allowed to exist in any pasture. The Cypress has apparently been badly libelled, for common opinion puts it down as rank poison for cattle, whereas the report declares that although it is astringent no record exists of its having caused any injury to stock. Yews, Laurels, and Rhododendrons are very poisonous, the two latter yielding an essential oil rich in prussic acid. Cattle having access to them die with all the characteristic symptoms of prussic acid poisoning—laboured breathing and suffocating convulsions—and should never be allowed near them.

— **BIRMINGHAM GARDENERS' ASSOCIATION.**—At a recent fortnightly meeting, Mr. Walter Jones in the chair, an interesting lecture, entitled "Hardy Spring Flowering Plants," was given by Mr. W. B. Child, Acock's Green. The interest was also enhanced by a small collection of plants in flower of such as Polyanthus, Primroses, Anemones, Heaths, and Doronicums brought by the essayist. Mr. C. R. Bick, gardener to Walter Chamberlain, Esq., brought several examples of berried branches of Aucubas. Mr. Child, in the course of his remarks, drew attention to Nature's disposal of Alpine and spring flowering plants as a study for the planter, advocating massing in preference to the "dotting" system for a larger proportion of the plants than is generally seen. He also recommended the imitation of natural rockery as far as feasible. Naturalising bulbs on the turf, amongst shrubberies, and other suitable sites, was referred to. An animated discussion ensued, and mention was made by one of the members of the two large groups of Grape Hyacinths (*Muscari botryoides* and *album*) noticed by him a few weeks ago on each side of the drawing-room entrance of the conservatory at Highbury, and which, in conjunction with a mass of white Lilacs in close proximity, produced a chaste and charming effect, an additional feature being the delightful fragrance of a long row of yellow and rose coloured double Wallflowers on the side stages, amongst Cinerarias, Primulas, Hepaticas, Hyacinths, and other bulbs.

— **COLLEGE OF AGRICULTURE, DOWNTON.**—The winter session of this College terminated recently, when the following awards were made:—The diploma or certificate of membership of the College after two years' residence, and passing in all the subjects taught, to L. E. Clarke, 9, Chichester Street, London; T. P. Goodchild, Pidnell House, Farringdon; D. A. Drummond, Blinkinsop Castle, Northumberland. Certificates of practical proficiency—D. H. Wood, Elim, Lyndhurst Gardens, Hampstead; G. W. Carpenter-Garnier, Rookbury Park, Wyckham; C. Mitchell, Longnor Hall, near Penkridge, Staffordshire. Prizes were also given in various subjects as follows:—L. E. Clarke, agriculture, knowledge of live stock, butter making, estate management, book-keeping and forestry; H. R. Board, Farley, Westerham, agriculture, valuation of farm stock, estate management, building construction, book-keeping, veterinary science, chemistry, and practical chemistry; H. W. Ethelston, Hinton, Whitechurch, Salop, agriculture, valuation of farm stock, building construction, and book-keeping; D. A. Drummond, valuation of farm stock and ploughing; G. W. Carpenter-Garnier, valuation of farm stock; T. S. Bliss, 36, Via de Delfini, Rome, farm machinery and practical chemistry; K. B. Foyster, All Saints' Rectory, Hastings, milking; G. W. Orr, Cowdon Hall, Neilston, N.B., milking and estate management; A. C. Shakerley, Leaton Knolls, Shrewsbury, waggon driving; T. P. Goodchild, building construction, veterinary science, and chemistry; O. F. C. Yarborough, Camp Mount, Doncaster, veterinary science; J. Benson, Harnage House, Shrewsbury, chemistry, practical chemistry, and physics.

— GERBERA JAMESONI.—In reading your Journal of the 13th inst. I saw the answer to "F. C." re the above plant, and as I happen to have several plants which I can spare I thought it might be worth while to write to you. I have sold several plants to Messrs. Hugh Low & Co. (who showed one before the Royal Horticultural Society recently), the Earl of Searbrough, Bishop of Salisbury, and others. The reason I have some plants is that a brother of mine in Africa saw the plant, and sent me some seeds. I intend advertising plants, both in bloom and out.—HEDLEY H. COOMBS.

— ECHEVERIA METALLICA.—This bold member of the Cotyledon tribe is known by many, but grown by few. It is an effective plant for the centre of carpet beds, or wherever a conspicuous object is required; but the difficulty I have experienced is to propagate it, though perhaps other readers and growers may have been more successful. For some years I grew about a dozen stock plants, which were annually planted out in the summer, lifted in the autumn, potted and stored in a cool house. Scarcely any water was given during the winter, but the plants kept in good condition. When they got leggy through losing their lower leaves the stems were cut off at planting time, and though the plants were put out with scarcely any root they never appeared to suffer, and when lifted they had again thrown out abundance of fibres. Numerous offsets were put in with the idea of propagation, but invariably they ran away to flower spikes and failed to make plants.—H.

— IS THE CROTON DECLINING?—Perhaps I shall get pulled up short by Croton lovers for suggesting such a thing, but, like Rose Dattle, I only ask. I often think it must be so, for there does not seem to be anything like the same interest taken in these gaily tinted foliage plants as was the case some years ago. Possibly the decline of the popularity of specimen plants has had something to do with it, and it may be that the tints of the Croton do not appeal to growers as they did of yore. I think the surest sign of the decline of any plant is the absence of new forms. I remember when there was a kind of run on new Crotons, but though I con the reports of the Royal Horticultural Society closely I have seen no account recently of a new Croton gaining an award, or even being put forward for one. Perhaps the cut flower demand has spoiled the Croton's chances in private establishments, for the plant requires stove temperature and a good deal of attention, while its chief use is for table decoration.—G.

— CAMELLIA RETICULATA.—For three or four weeks at the latter end of March and beginning of April the large specimen of this species, growing in the temperate house at Kew, makes a gorgeous display every year. At the present time it is at its best, and is worthy a visit from anyone interested in greenhouse plants. Although not so popular as *C. japonica* and its varieties, it has merits which warrant it more general cultivation, and as these become recognised it will doubtless be used freely for the decoration of large houses. In general appearance it has a looser and more graceful habit than *C. japonica*, with longer more acuminate leaves, and larger flowers. In the typical plant, which grows wild in the woods of Hong Kong, the flowers are single, those of the Kew plant being semi-double. When fully open they measure from 5 to 7 inches across, and closely resemble the flowers of a tree Peony. They are rich rose coloured, and are set off by a mass of bright yellow stamens in the centre, which mingle with the petals. It has been in cultivation for a long time, a figure being given in the "Botanical Magazine," t. 2787, as long ago as 1827.—D.

— PROFIT IN PALMS.—"I look upon these as a safer investment than freehold property," said one of our best known market growers to me recently when, after looking through some score or so of houses filled with them, I touched upon the financial side of the question. And there is no doubt he was quite right. A house of Palms is one of the easiest to keep in order if up to date methods of culture are practised, and each year all the popular decorative kinds increase in size and therefore in value. Another firm of growers in Middlesex has several houses filled with Kentias of the more popular kind; tens of thousands of plants in various sizes. One of the firm assured me that they were still understocked, and if the right class of "stuff" was on the market they would be buyers to a large extent. The demand for these is, in fact, unceasing and seemingly unlimitable; and with all the cry out about the unhealthy London fogs, it is a remarkable thing that a very large percentage of the decorative plants are grown within a few miles of the metropolis. Fog or no fog, there it is grown and from there it is distributed throughout the land. Our provincial nurserymen rely on London stuff, though possessing equal facilities for growth, and for Palms alone much money is annually spent by them that by growing the right class of material might be kept in their own pockets.—H. R.

— HYBRID MUSKS.—With the exception of Harrison's Musk, which has been so universally grown, and is known by all, the only real hybrid Musks I have known were three, quite distinct, raised by the late Mr. A. Clapham, who employed on the common Musk pollen from *Mimulus cupreus*, and, I think, *M. lutea*. Certainly his major hybrid was a fine yellow, large in bloom as Harrison's, but clear in hue. Then there was a very dwarf, compact, large-flowered yellow form, and one exactly similar in habit, but having flowers of a coppery red. This was certainly one of the *cupreus* cross. I grew and propagated these for several years at Bedford, but do not know whether they are still in commerce. Like Harrison's, they were sterile, no fertilisation with other pollen proving productive of seed. Had Mr. Clapham been alive he could have furnished much valuable information to the Chiswick Conference.—A.

— WHEN FLOWERS SLEEP.—Foliage for the most part sleeps by night only; but flowers take casual naps now and again when danger looms in the daytime. This is only what one might expect, for the flower is usually the part of the plant which does the most varied external business and holds the most specialised intercourse with the rest of nature. The leaf has relations with the sun and the air alone; but the flower has to attract and satisfy all sorts of fastidious and capricious insect assistants; it has to produce pollen, honey, and seeds; it has to provide for its own fertilisation and that of its neighbours; hence it may have to wake or sleep in accordance with the convenience of the outer world, just as a railway porter or a club servant must get up and go to bed, not when he chooses himself, but when his employers choose to make him. The rule with flowers is this: they open the shop when customers are most likely to drop in, they shut it when there is nobody about and when valuable goods like honey and pollen run a risk of getting damaged.—(Grant Allen in the "Strand.")

— VIOLAS.—It is great advantage in the employment of these dwarf growing plants in summer bedding arrangements that being hardy they can be planted out where to bloom in April, and thus get well established some time before the tender plants are put out. But for spring planting none are better than are those grown from cuttings put into a frame or shallow boxes, or under hand-lights in September, as they not only root freely during the winter, but because entirely from young tops make more liberal growth than do old or separated plants. Violas for summer bedding are preferably used as carpets on which various taller or decorative plants grow. Occasionally pinched to induce the formation of fresh flowering shoots, and especially with the seed pods regularly gathered, flowering goes on over a very long season. Probably no plants continue to bloom longer and need so little trouble. Then Violas associate admirably with other plants in mixed beds. But for this purpose the looser habited growers—and few are more charming than Duches of Sutherland or Archie Grant—do admirably, as they send up their long shoots to intermix with other plants so pleasingly, although any variety grown under such conditions will of necessity have greatly elongated shoots.—A. KINGSTON.

— FRUIT PROSPECTS.—The showery weather, with occasional gleams of sunshine, seems to be favourable to bloom expansion, for whilst it opens slowly, certainly it is doing so strongly, and at this moment of writing the earlier Plums are as white as snow. There will be no fear of harm from frost whilst the showers and the cloud remains, and showers do not seem to check fertilisation, indeed they rather aid it. Showers, too, will help leaf expansion, and tend to keep the young foliage from early attacks by aphids. Cold, dry, harsh winds encourage these pests materially. The late rains have thoroughly moistened the roots, and should prove helpful in inducing the fruit presently to swell rapidly. The other day I was asked, Does exceeding abundance of bloom on trees tend to check fertility, seeing that poor crops so often follow upon great bloom? Also, can anything be done to correct this trouble by thinning the bloom? I replied first to the latter, that something might be attempted to correct the trouble referred to in the previous question by pinching out on a bush or wall tree, or any other tree that could be thus controlled, one-half of the flower trusses, but not tearing away the woody spurs; that would materially relieve the tree of a great burthen, assuming that a heavy bloom was so great a burthen to a tree that it rendered fertilisation through poverty in pollen production difficult. It is a direction in which many persons may well experiment, and it would be a very practical experiment. We are too apt to regard a huge bloom on fruit trees with complacency, without stopping to inquire what its general effect may be on the tree. Gooseberries and Currants usually bloom regularly and evenly, hence they fruit regularly, but Apple, Pear, and Plum trees in particular commonly go to extremes. The variations oftentimes, diverse as they are, give us the same barren results.—A. D.

TRANSFORMATION IN FRUIT TREES.

WHAT an incentive it ought to be to the reader-workers of "our Journal" to record their experiences in its pages, after such a minutely detailed account on page 272 (April 6th) by Mr. Jno. Miles, of the method of combating the enemies there described of British fruit growers. That article is worthy of being framed and hung up in every fruit room in the kingdom. The writer of it plainly shows what may be achieved by exertion and perseverance (and there is little or nothing gained without). I do not believe that Mr. Miles is a grumbler about bad times for fruit growers, for I suspect he is too busy to grumble. I regard those men as benefactors to the British public who produce fruit of the finest quality and exceeding in value that of the foreigner. I wish there were more such workers as Mr. John Miles.—Geo. PICKER.

[Our practical and industrious correspondent should be grateful to the "foreigner" all the same, for, by the character of his wares, stimulating home growers to greater activity and the adoption of better methods in producing for the million fruit worthy of the name and nation. Mr. Miles' record of experience was very useful, and his notes were readily published.

The method advised by Mr. Molynoux in the lecture referred to on the page above cited was first made known to the British public through the *Journal of Horticulture* by an Englishman, Mr. Leonard Coates, who landed in America with about £5 in his pocket, and has for some time been one of the largest nurserymen and fruit growers in California.

We suspect there are many improvers of Apple and other fruit trees in Britain who are either "too busy" or disinclined to narrate their methods, while it is certain there are many spoilers of fruit trees. We could give instances of the peculiar methods of some of these so-called gardeners (whose ignorance is so great as to enable them to refrain from seeking knowledge anywhere), that would startle the Miles, Pickers, and other good men; but it is more pleasant to refer to the work of an improver.

A short time ago we had an opportunity of visiting the gardens of the historical Abbey of Battle, near Hastings. There is a fine kitchen garden there, splendidly managed, and numbers of trees that had when "taken to" by Mr. Cann got in the habit of growing everything that trees can support except Mistletoe and fine clean fruit. A crush and a crowd of useless wood and apologies for leaves, with scale and moss much more abounding than even small specked fruit, "not fit for sending in." Those were the characteristics. The trees, in fact, occupied much ground uselessly. The worst were rooted out and new trees planted, the remainder treated with—well, with "brains;" and here is nothing better when these are educated.

Saws and chisels were brought into operation, and all weak, worthless, and cankered parts cleared out, the better branches retained at 2 to 3 feet asunder, and the extension growths of these not shortened. The worst stems and branches were scraped, and all parts sprayed with the caustic solution mentioned by Mr. Miles. The ground was soaked during the resting season with strong liquid manure, and lime and soot were also used freely. The effect of the treatment was apparent in clean branches, fresh young growths, and bold leafage. By the thin disposal of these growths, so that the sun could shine between them, the foliage was of the best character, the wood well stored with nutrient matter, and as little or no shortening was done the stems became studded with bold fruit buds. The trees must very shortly be wreathed with blossoms of the finest character, to be followed, weather permitting, with tons of excellent fruit.

As affording evidence of what may be done in the renovation of crippled Apple trees, it may be stated that the produce of some of these old trees enabled Mr. Cann to "come in first" last autumn at the Crystal Palace in the class "open to growers in Surrey, Sussex, Hants, Dorset, Somerset, Devon and Cornwall." Such are the facts. What has been done in a few instances may be accomplished in many in improving fruit trees that are capable of renovation when the varieties justify the work. Though the practice cannot be carried out in extensive plantations, thorough soakings with strong liquid manure at any time, from the autumn to spring, when the liquid will pass down freely, have a far quicker and more potent effect in invigorating enfeebled trees than accrues from surface sprinklings of artificial manures, however good these may be; but thorough cleansing and common sense pruning in the form of branch thinning, with little shortening of the better parts, are essential accompaniments. Under such procedure, and in some cases of grafting, also especially by planting and intelligently managing young trees in wisely chosen varieties, such a transformation may be effected in home-grown fruit, which, if properly placed before the public, will compete successfully with any that can be brought against it in the best market in the world—Britain. It is a question of men and their methods, nothing else.]



ROSE SHOW FIXTURES IN 1899.

- JUNE 13th (Tuesday).—Cambridge.
 „ 14th (Wednesday).—York†.
 „ 21st (Wednesday).—Isle of Wight (Shanklin).
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (N.R.S.).
 „ 28th (Wednesday).—Bath, Croydon, Reading, Richmond, Maidstone, and Ryde.
 „ 29th (Thursday).—Canterbury, Eltham, Norwich, and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Ealing and Hanley°.
 „ 6th (Thursday).—Colchester (N.R.S.).
 „ 7th (Friday).—Hereford.
 „ 11th (Tuesday).—Wolverhampton.†
 „ 13th (Thursday).—Brentwood and Helensburgh.
 „ 20th (Thursday).—Salterhebble.
 „ 25th (Tuesday).—Tibshelf.

° Shows lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

A CORRECTION.

WILL you allow me to correct an error into which I have unwittingly fallen in the present issue of "The Rosarian's Year Book," and wherein I stated that Messrs. Harkness had succeeded to the business of Mr. May in Bedale. I am assured that this is not the case. The present firm of Messrs. J. & A. May, of Hope Nurseries, continues the business, which was purchased by them from the late Mr. Henry May's executors about five years ago, and has not only been carried on by the May family for three generations, but is now in a flourishing condition.—THE EDITOR OF "THE ROSARIAN'S YEAR BOOK."

NOTES ON TOMATOES.

THE final potting or planting out of Tomatoes must be attended to now in all cases where the plants are sufficiently advanced in size. Some advocate planting them in a border, while others pin their faith on pot culture. The grower must be guided by circumstances. If the plants are not near the glass or in a very light position, it would be folly to plant them out permanently and expect them to fruit abundantly. In such cases they are better managed in pots, because the pots being portable, they can be easily elevated to positions near the glass, which is indispensable to the welfare and success of Tomato growing.

A low span-roof structure, well heated and ventilated, is undoubtedly the best house for growing Tomatoes. A border should run down each side with a base of wood or stone at no great distance from the glass. Four to 6 inches of soil may be placed in this about 14 inches wide, this being held together with a row of loose bricks, and if the base of the bed slightly inclines to the front ready escape will be afforded for the superfluous water. Good stiff holding loam, half decayed and turfy, is suitable compost. It will not need enriching with much manure, but burnt refuse and some pounded lime rubbish will materially improve it. Place out the plants not less than a foot apart on small mounds, just covering with soil to give the roots a start. More can be added as needed from time to time. The soil must be made firm about them, and not too freely watered at first.

In pot culture the final potting is made in 11, 12, or 13-inch pots. A small quantity of drainage should be effectively placed in the bottom of the pots. On this insert the plants, and add no more soil than will cover the ball when made firm. A very light position must be chosen. Sometimes a temporary shelf is requisite, as the plants must be near the glass. Water carefully until the roots have worked into the compost. As the plants grow and become established, the pots may be gradually lowered to the position they must ultimately occupy. As soon as practicable commence training a main stem to a wire under the roof. Rub out all others as well as side shoots originating from the axils of the leaves. The compost allowed them to root in will suffice until the first fruits are set, when fresh may be added. A little heat is beneficial to assist the early growth, but ventilation must be constantly allowed.—E. D. S.

EMBOTHRIMUM COCCINEUM.

ALTHOUGH hardy, and grown in the open in favoured localities in the S.W. counties of England, this South American Protead requires the protection of a cool greenhouse in most places. At present a plant is

Messrs. Veitch in 1853, and was figured in the "Botanical Magazine" (t. 4856) about that time from specimens supplied by that firm. It makes a somewhat loose bush, with leathery oblong leaves, 4 inches long by $1\frac{1}{2}$ inch wide, dark green above, glaucous beneath. The flowers are borne in dense terminal racemes. They are scarlet in colour, and $2\frac{1}{2}$ inches

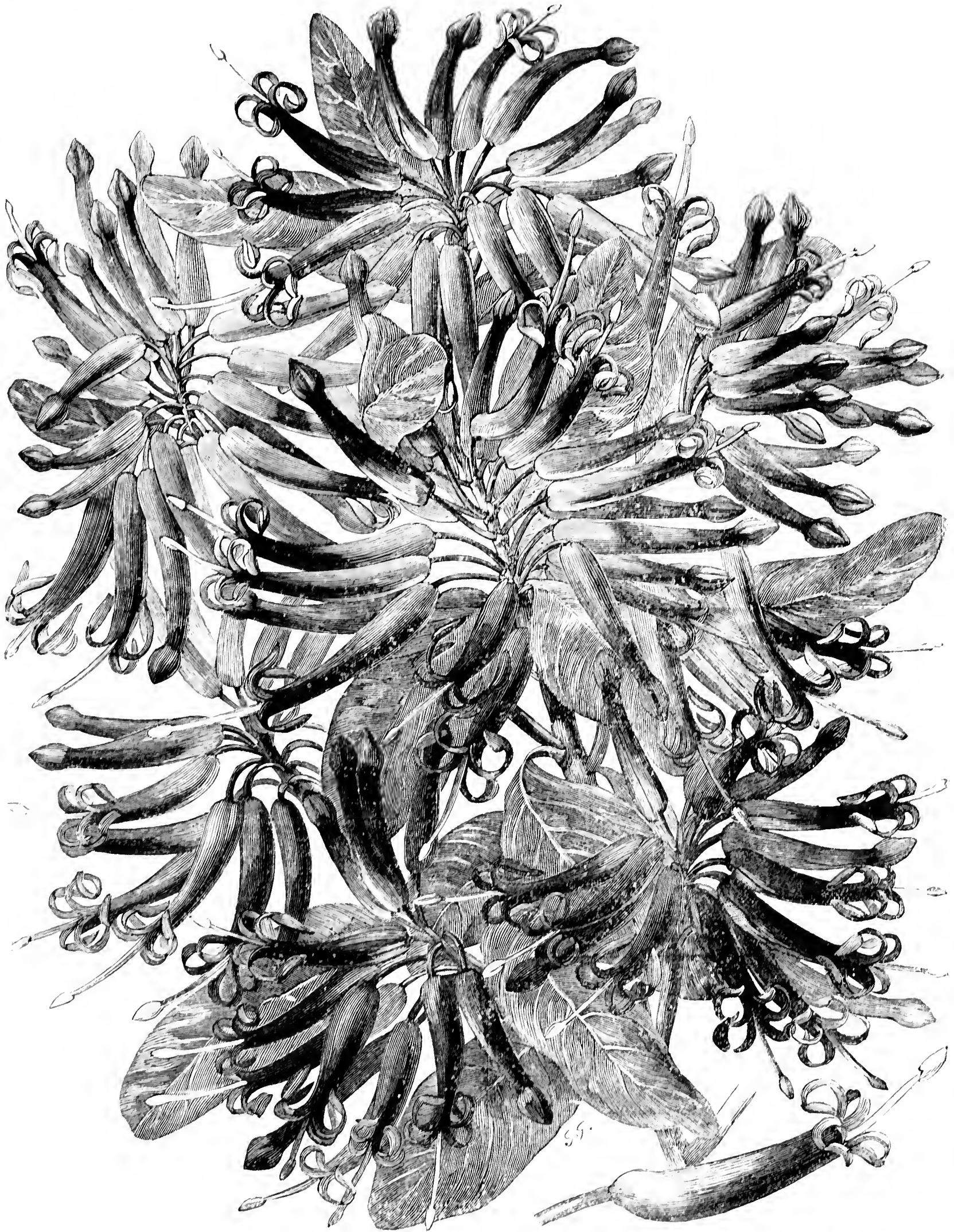


FIG. 71.—EMBOTHRIMUM COCCINEUM.

flowering nicely in the Himalayan house at Kew, where its bright coloured blossoms are seen to advantage against the dark foliage of neighbouring Rhododendrons and Camellias. Though by no means common, it has been in cultivation in this country for close on half a century. It is recorded to have been in flower at the Exeter nursery of

long. The racemes on the Kew example are from 1 to 6 inches long. When once planted care should be taken not to disturb the roots, as it is a difficult plant to establish again if interfered with. Where it will grow and flower well it makes a gorgeous object during late spring.—W. D.

PROGRESS IN FRUIT PRODUCTION.

(Continued from page 302.)

REFERRING to our citation last week, Mr. Bear points out that his sentence, "Tabulated statements show that the totals for England and Wales have nearly doubled in the ten years that have elapsed since 1888," would appear to apply to orchards, "whereas the figures given are those of small fruits." The area of orchards, he points out, as given in the tables, only amounts to about 11 per cent. Mr. Bear gives the orchard and small fruit areas in separate tables. We are obliged by the correction, and continue the interesting and suggestive extracts, though they are only mere items characteristic of his copious production.

PLANTATIONS IN KENT.

"Messrs. William and Edwin Vinson together have about 1000 acres of Strawberries and Raspberries in the Orpington and St. Mary Cray districts; and when in partnership, until the end of 1897, they were the most extensive growers of these fruits in England. They had 650 acres of Strawberries and 350 acres of Raspberries, with a few acres of other kinds of fruit. Now Mr. William Vinson, to whom my visit was made, has about 300 acres of Strawberries, and his brother 350 acres. He is of opinion that the fruit industry is overdone. Fruit prices, he said, had fallen about 20 per cent. in the last twenty-five years, but are about the same as they were twenty years ago, or perhaps a little higher. At Crockenhill, near Swanley, Mr. John Wood, a very large and successful grower, has 600 acres of fruit, including 150 acres of Strawberries and 140 acres of Raspberries, the rest of the land being devoted to Apples, Pears, Plums, Damsons, Gooseberries, Currants, and a few Cherries. The Paxton is the principal variety of Strawberry, but Mr. Wood, like Mr. Vinson, complains of it as 'wearing out,' as shown by its mildewing badly. Royal Sovereign is being more and more extensively grown on this farm, though Mr. Wood considers it inferior to Paxton in flavour, and it does not travel so well—no other variety does. Mr. Wood will not have anything to do with the watery and flavourless Noble, early though it is, as he declares that it 'cripples the Strawberry trade,' meaning that it is a source of much dissatisfaction among wholesale and retail buyers. Messrs. Wood Brothers, successors to the late Mr. Thomas Wood, hold about 3000 acres of land in Kent, about 2000 acres being under fruit. The extent of their cultivation of Raspberries may be grasped from the statement that last year, a bad season, they expected to produce 500 tons of this fruit. Mr. Cannell stated that he had known 75 tons of Strawberries to be despatched from Swanley station in one day, in addition to large quantities sent by road. In the jam factory there are fifteen steam-jacketed vats in one row, and six others for candied peel. Mr. Leopold Wood, who manages the factory, stated that he expected to produce last season about 3500 tons of jam, 850 tons of candied peel, and 750 gross (108,000 bottles) of bottled fruit.

"In the Maidstone district Mr. Frederic Smith, of Loddington, was named by some good authorities as one of the best fruit growers in Kent, and a visit to his plantation of 200 acres fully confirmed this statement. He grows chiefly Apples, Plums, and Damsons as top fruit. Cob Nuts are the principal bottom fruit, half the land, or 100 acres, being occupied with them, and the trees under and among which they grow. Among the interesting notes in Mr. Smith's statements, the more important must be given in miscellaneous style. Cob Nuts pay fairly as a rule, and sometimes well. Three good crops had been grown before last year; but the crop of the recent season was expected to be only about half a ton per acre. In 1897 Mr. Smith produced 100 tons from 100 acres. He once grew the great crop of 2 tons per acre, while his brother produced the enormous crop of 3 tons. Many growers say that the Stirling Castle variety of Apple is of no good to them, as it is such a tremendous cropper that it wears itself out quickly; but at Loddington it is manured heavily, and the trees are gone over twice to cut off superfluous blossom twigs. When Plums are thick on the trees, thinning them pays well, as the green fruit realises money enough to pay for the labour. One peck per bush is a fair crop of Gooseberries, but half a bushel per bush is sometimes produced. Last season Gooseberries started at 8s. a bushel, went down to 2s. 6d., and rose afterwards to 5s. or 5s. 6d.

"Mr. W. W. Berry, Gushmere Court, Faversham, grows fruit and Hops on an extensive scale. At Selling, which is Mr. Berry's nearest station, I found myself in the midst of a great fruit and Hop country. The soil for the most part is a stiffish loam over brick earth, with a chalk subsoil 8 feet to 9 feet below the surface. Fruit does well with such a depth of soil before the chalk is reached, but not where the latter is near the surface. The price of land varies from £30 to £150 an acre when disposed of in considerable quantities; but small holdings with fruit upon them or suitable for fruit are much dearer. For example, half an acre of land with a tumble-down cottage upon it realised £140 shortly before my visit. As it lets at £10 per annum, it is not a bad investment at the price. Fruit plantations in full bearing let at £8 to £10 an acre, and the land of one that I saw, only five years planted, had

been bought at £55 an acre, and would now let at £6 per acre. A good Cherry orchard, Mr. Berry says, is worth £300 an acre if in full bearing. One farmer in the district has sixty acres of Cherries; another near Sittingbourne holds a still larger extent of young trees; and a landowner who has farms in hand has one hundred acres of this fruit. Fruit growing appears to pay in the district, and workmen who have saved money occasionally obtain a small holding, and do well at the industry; but Hops, when well managed, according to the occupier of Gushmere Court, pay better than fruit. Mr. Berry farms 600 acres of land, seventy acres being in fruit and 180 acres in Hops.

DURATION OF FRUITS.

"On the question of the duration of different fruits, Mr. Berry said that Raspberries would stand fourteen to fifteen years, Plums twenty to twenty-five, Cherries sixty to seventy on suitable soils, and Apples up to a hundred years. Gooseberries and Currants are commonly left twelve to fourteen years under fruit trees, but would last longer if required. Trees usually cover the ground almost completely in the period named, and the land is often laid down to grass. With respect to fruit on grass land, Mr. Berry's views correspond closely with those of Mr. F. Smith. Cherries always, and Apples generally, he said, do best on grass, and most Plums on arable land. Although the point was not put to him directly, it may be assumed that he would not recommend the planting of any fruit on grass, as all his directions indicate planting in arable fields. It is only after even Cherries and Apples are well established, and their roots have penetrated below the depth from which grass exhausts most of the fertility in the soil, that grass should be allowed to compete with them for nutriment.

"Berry's Early Kent is the Gooseberry which does best at Gushmere Court as the earliest for picking. In April last year it made 8s. a peck. It is a chance variety of unknown origin, and is of value chiefly to sell green, not being recommended as the sort to be ripened. Lancashire Lad and Whinham's Industry both flourish and bear well, but are comparatively late. The former is better than the latter to sell when ripe, while Crown Bob is better still to eat, if not to sell. Some very fine dessert Gooseberries of the Gunner variety are also grown. Of the Red Currants, Fay's Early is regarded as the best early variety, La Hative, Early Dutch, Late Dutch, and Scotch Red being also cultivated. Baldwin and Champion are the Black Currants; Paxton and Royal Sovereign the only Strawberries.

IN CAMBRIDGESHIRE.

"Under the valuable guidance of Mr. Arthur Bull, of Cottenham, many of the fruit plantations of that parish and of Histon, adjoining, were seen early in the season. A large portion of the land in Cottenham is on the lower greensand, the best of all formations for fruit. Bare land suitable for fruit is worth £60 to £120 an acre, and quite half the land in Cottenham is owned by the growers. About 1000 acres of land are under fruit in Cottenham, and about the same area is devoted to Asparagus, which, however, is giving place to fruit to some extent. Nearly all the fruit has been planted within thirty years, progress having been equable all the time. There are many small holdings, some only 2 or 3 acres, and others 7 or 8 acres, while few men hold more than 20 acres, and not more than two over 50 acres. Some of the men who have purchased 2 or 3 acres for fruit growing farm large holdings as tenants, growing ordinary farm crops. In reply to a question as to the smallest area of fruit land on which a family could be supported, Mr. Bull said he thought that owners of 6 acres saved some money. Mr. Bull said prices for fruit have varied greatly, but have not fallen during the last twenty years. He has 40 acres of fruit land, partly his own. He planted the first 8 acres twenty-two years ago, and the plantations are healthy and well cultivated.

"One of my most instructive visits was to the admirably managed fruit plantations of Mr. I. F. Thoday, of Willingham, Cambs. There are about 200 acres of fruit in that parish, besides what small growers cultivate, which cannot be easily estimated. Mr. Thoday has 45 acres under fruit, and is the largest grower in the parish. He grows Sutton's Earliest of All Tomatoes, outdoors, and in one year he produced 50 tons. Mr. Thoday strongly objects to crowded orchards, he appears to doubt whether thick planting in the first instance, and the removal of every other tree when necessary, is not more profitable than thin planting. He showed me a neighbour's orchard of Plums and Gooseberries, in which the trees are only 10 feet by 8 feet, and in some places 10 feet by 6 feet, as one of the most profitable in the parish. It is but 8 acres in extent, and he thinks it yields a profit of £400 in a good year. But every other tree now needs to be cut out, or the orchard will certainly deteriorate. Mr. Thoday himself made £800 on one occasion of 10 acres of Plums. Another highly remunerative crop was 50 tons of Gooseberries from 7 acres, with top fruit besides. Yet another was 2 tons of Raspberries from an acre and a quarter of land, sold at £25 a ton.

"In the Wisbech district, according to an authority in the neighbourhood, there are fully 6000 acres of land under fruit, most of it

being in Norfolk, but some in Cambridgeshire. Eighty tons of Gooseberries have been despatched from Wisbech Station in one day. Strawberries and Raspberries are very extensively grown, and Mr. Richard Bath and his partners, whose great fruit and flower farms were visited, gathered 40 tons of Strawberries in one day in 1896. The two firms of which Mr. Bath is head hold 900 acres of land, about 850 acres, as the foreman of one of the firms estimated, being under fruit, including 210 acres of Strawberries. The fine alluvial soil (some of it let at £3 an acre) is perfect for Raspberries, and apparently suits other fruits also. Very little fruit, according to my informant, was grown in the district sixteen years ago, when Mr. Bath started his great enterprise."

VALUES OF MIDDLESEX ORCHARDS.

MR. W. E. BEAR, in his article to which last week you made reference, seemed to regard £10 per acre rental per year for fruit orchards in Middlesex as very high. No doubt it is, but in the neighbourhood where I so long resided such rents were common for established orchards, although they fell somewhat later. When an orchard is planted, as so many in Middlesex are, with Apples, Pears, and Plums, fairly close, and Gooseberries and Currants almost densely between them, and is in its tenth or twelfth year, it is in the most fruitful condition, and the produce is on the average enormous. But such a method of cropping soon exhausts the soil, because when the top trees become strong they need all the root area the ground affords, whilst the roots of the bushes nearer the surface practically absorb all the surface manure dressing, and the trees get little.

If the top trees are at their best from the tenth to the fifteenth year, the bushes are best from the fourth to the tenth year, and certainly by the twelfth year they should be destroyed, thus enabling the tree roots to obtain needful food, whilst the surface might be cropped with Daffodils, Violets, Wallflowers, Queen Stocks, and similar plants, which being from time to time cleared off enables the soil to be freely dressed, and surface cultivated. Mr. Walker at Ham does not grow bushes beneath the trees, as they are generally of bush form rather than standards, but flowers are cultivated. By bush cultivation higher class fruits are obtained than is the case with standard trees, as these usually are of commoner varieties; not but that very free-fruited common varieties as a rule pay well, but then they do not produce that description of high-class fruits which are so much needed in our best markets.—A. D.

NOTES ON PEACHES.

PEACH BUDS DROPPING.

I SHOULD like to give my opinion on this point. Mr. Markham (page 252, March 30th) is of the opinion that the mischief is done before starting time. My aim has always been to prevent bud-dropping, and a few details as to my practice may not be out of place. Immediately the crop of fruit is gathered the border is dressed with lime, until it looks as if there had been a fall of snow, forking it into the border at once, and follow in a day or two with a thorough watering. The next operation is to work into the surface soil a mixture of charred ashes and soil, and the border is never allowed to become dry, as I think this is conducive to weakness in some portion of the tree. Instead of this we want continued progress to assist the growth and formation of the buds, and to encourage the storage of sap for the coming season. Constant watch is kept on the wood and buds, the house being ventilated to its utmost capacity, syringing being practised morning and night. When the wood is thoroughly ripe syringing ceases, and the trees are given their required rest in the lowest possible temperature.

At starting time, after seeing that the border is properly moist, we commence forcing with the ventilators a little open, and the pipes kept warm. This I consider the critical period in the dropping of the buds, which I attribute to the expansion and contraction of the sap, directly in connection with the expansion and contraction of the atmosphere. Bearing this in mind, I endeavour to make the atmospheric conditions as natural as possible. Early on each morning, and again the last thing at night, the houses receive a thorough syringing, the pipes being kept warm, and the ventilators a little open; water is given in accordance with the drainage of the border. I must have continually a free circulation of air passing through the Peach house, night and day, so that I may avoid any suspicion of weakness, and insure, so far as in my power, the perfect development of the flowers. Everything is kept scrupulously clean, which with the healthy growth induces each portion of the tree to perform its proper functions.

Artificiality is the cause of Peach buds falling. If the foundation is not laid by naturally well ripened wood, and the roots are unhealthy so as to do their duty when called upon, then failure must ensue. Imitate Nature so far as is possible, providing showers by the aid of the syringe; secure warm air currents through the house by proper manipulation of the ventilators, and provide a warm and genial instead of a cold sap-chilling atmosphere; and success should follow. In conclusion I may say that I am convinced sufficient attention is not paid to ventilation, as with fresh air and slightly more warmth in the pipes, we should do much better than is the case at present.—H. MITCHELL, *Druidstone*.

HARDY FLOWERS IN APRIL.

A BACKWARD season does not inspire one's pen, and such it has been up till now. The Daffodils are here, but not in the numbers we are wont to have at this time in ordinary seasons, and the laggards move slowly towards their opening stage. There are plenty of buds, and one cannot complain of sparse flowering, either among those in bloom or those which will follow on. Big clumps of *telamonioides* plenus, Henry Irving, Mrs. H. J. Elwes, and Tottenham Yellow give a welcome brightness below the grey skies above. Muscaris grow, the pretty clustered bells on their close spikes looking fine among the green leaves. I often think none is prettier than the old *M. botryoides*, but there are beauties, too, in the flowers of *M. conicum*, *M. botryoides* album, *M. Szovitzianum*, *M. racemosum*, and others. Puschkinias are yet in flower, and look pretty with their pearly white and blue blooms. A few late plants of *Scilla bifolia carnea* are still fresh, and *Scilla sibirica* has not yet passed away.

Seldom have we so few blooms of *Anemone coronaria* at this time as this year. There are many flowers on *A. blanda*, which has been later than usual. *A. apennina* has caught up with its congener, and with its white and rosy varieties looks pleasing. Charming, too, are *A. nemorosa purpurea* and *A. ranunculoides pallida*. Primroses and Polyanthes looked unpromising for a time, but they have been fast making up leeway and now are covered with bloom. The variety of colours and shades they give is very pleasing to see.

Arabis and Arabis have not assumed their full garment of flower, but are attractive for all that, with the purple and white blooms on their sheets of green. Some of the Dog's Tooth Violets are pleasing still, though others, as their wont is, have passed quickly away. Here is *E. grandiflorum*, and there is *E. Smithi*, with its light-looking butterfly flowers of white, with yellow base and purple-flushed exterior. In a rather moist but sunny place it is now established below a clump of *Primula Sieboldi*, which is as yet only an inch high. Some Alpine Primulas are in bloom, but the past winter has not favoured them, so that they give less bloom than usual. Neither *P. denticulata* nor its variety or sub-species *cashmeriana* are nearly so fine as they usually are.

The quaint Fritillarias are coming on. Already some of the varieties of *F. Meleagris* are in bloom. The peculiar, yet pretty, *F. acmopetala*, and the charming *F. pallidiflora*, with others, will shortly flower. On the rockwork the old-fashioned *Pulmonaria officinalis*, in several varieties, looks not uncomely in its own way, while the one named *saccharata picta* will be useful by-and-by with its white splashed leaves.

Rhododendron præcox has parted with its bloom for the year, but *R. ciliatum album* has taken up the tale, and now looks beautiful in its sheltered place. *Cytisus præcox* is showing colour along its stems, and *C. ratisbonensis* or *biflorus* will run it hard for first place among the hardy Brooms. On a sunny wall and against a trellis *Forsythia suspensa* is covered with golden blossoms. They look so fragile that one is surprised to see them last so long. *Erica carnea* is as fresh as ever, too, and *E. mediterranea alba* has also come into bloom. The *Doronicums* are not yet in full flower, but *D. caucasicum* is charming even now.

Sanguinaria canadensis—the Puccoon or Bloodroot—is as delightful as usual when it opens out to the sun; and *Triteleia uniflora*, which is a weed with some, is beautiful near by. A little *Ornithogalum*, whose acquaintance I have not long made, is *O. tenuifolium*, an attractive species which is, I am told, less obtrusive and encroaching in its ways than most of its friends. It is crowded with its silvery white flowers. Violets are delicious with their fragrance—a gift so precious as to make them prized for that alone had they not the additional beauty of colour to recommend them. In a shady place *Cardamine rotundifolia* has shot up its stems with their small white flowers, and the Saxifrages known as Magaseas, such as *S. cordifolia*, *ligulata*, or *Stracheyi*, have begun to bloom.

Not many of the Tulips are ready to flower, but the, as yet, rare *T. Kaufmanniana* has kept open for a fortnight despite the weather we have had, and a flower on a clump, sent me some years ago from Chios, keeps it company. There are double Daisies, Corydalises, the rare *Scilla italica alba*, with stray blooms on other plants, so that, late as is the season, its record of bloom is not a barren one. The impulse of Nature has come to the flowers, and bloom they must, cold and cheerless though the time.—S. ARNOTT.

A NEGLECTED CAMELLIA.—Perhaps Camellias are generally neglected nowadays, though it is gratifying to now and then meet with champions of this fine old flower. Only recently I saw growing on the back wall of a Peach house a tree of the old-fashioned single white Camellia now so rarely met with. The tree was a mass of bloom, and the pure white flowers with golden-yellow stamens were exceedingly effective. The outcry against the Camellia for some time past has been that the flowers are stiff and artificial-looking, but surely this cannot be said about the single white. Its delicate nature and tendency to drop makes it unsuitable for cutting, but when grown in pots and covered with flower there is no plant more effective at a time when bloom is scarce.—H.

GRAPE GROWING OUTDOORS AND IN COOL HOUSES.

THE Romans are supposed to have introduced the Grape Vine into Britain about A.D. 10, and Tacitus, some eighty years later, declared that "the moist climate was unfavourable to the Vine maturing its fruit." This indicates that the climate was not materially different 1800 years ago from what it is at the present time, and appears to have had little deterrent effect on the cultivation of the Vine in England, for the battle of Hastings was fought near a great plantation of Vines. Even war and the chase, the greatest foes of agriculture and horticulture, did not uproot the culture of Vines in England, and Domesday Book contains thirty-eight entries of valuable vineyards, two of 6 acres each in the Lea Valley, one at Ware, and one in Essex. In the Great Ouse Valley, the Isle of Ely was called the "Isle of Vines" in Norman times, and the vineyard of Peterborough was planted by the Abbot in the reign of Stephen, about 1140. Prior John, of Spalding, in Lincolnshire, planted vineyards, as did the Abbots of Denny Abbey, Cambridgeshire; likewise the Abbey of Bury St. Edmund's, in Suffolk, had a vineyard among its appurtenances, and the Priory at Dunstable, in Bedfordshire, founded by Henry I., had a vineyard attached to it. Most of the Barons of this period possessed vineyards and made their own wine. The hills at Godalming, in Surrey, and the Hampshire Downs were clad with Vines. Kent had vineyards—those of the Abbey of St. Augustine and the Priory at Canterbury. The valley of the Severn, according to William of Malmesbury, about 1148, at Gloucester, was the chief wine-producing district in England, there being "more vineyards and better Grapes grown in that county than in any other part of the country."

After the time just mentioned disputes arose with the ecclesiastics, and the country engaged in foreign wars, which led to the decline and fall of Grape Vine culture and of wine making in England. Still, in the reign of Henry III., British grown Grapes made excellent native wine, and the Bishop of Rochester sent Edward II. a present of "both wine and Grapes of his own growth at his vineyard at Halling." Then, for about 300 years, the fashion was for foreign wines—the produce of English provinces in France; yet home-made wine must have found some favour, for in the sixteenth and seventeenth centuries vineyards were in vogue. The first Earl of Salisbury made a vineyard at Hatfield House, Hertfordshire, about the year 1605, and Dr. Ralf Bathurst made excellent claret from Grapes grown at Oxford in 1685. On the slope of a hill at Dorking, in Surrey, Grape Vines were grown successfully for many years, but Defoe found "the vineyards at Deepdene neglected" in 1726. Dr. Shaw, however, grew Vines at Kensington so well that the vintage "equalled the lighter wines of France." At Cobham, in Surrey, on the warm, gravelly, and dry soil of Pain's Hill, Grapes were grown, and made into "champagne," by the Hon. Charles Hamilton. Collinson, in 1748, says, "a considerable quantity of wine will be made this year in England—my vineyard Grapes are very ripe" (October 3rd). In 1763 the Duke of Norfolk's cellars at Arundel Castle, Sussex, contained sixty pipes of English Burgundy, "better than imported," which was made from the Duke's vineyard produce. After 1790 vineyard Grapes appear to have again fallen into disfavour—that is, gone out of fashion, the blame being cast on a cycle of cold wet summers, when "vineyard Grapes ceased to yield good vinous juice for a period of twenty-five years."

Thus the art of growing Grapes in vineyards and that of making excellent wine in England appears to have been lost about a century ago. Wine, however, was still made from English outdoor-grown Grapes by the old-fashioned utilitarian viticulturists of the nineteenth century, but they were the exception rather than the rule, and vineyards were only mentioned as relics of the past. After the middle of the present century there seems to have been a re-awakening, for in the fifties, if I remember rightly, "Upwards and Onwards" detailed his experience in growing outdoor Grapes and making wine from them in the *Cottage Gardener*. The wine was "better than imported." Was this fact the prompter of the vineyard in the valley of the Taff, at Castle Coch, in Glamorganshire? Did the success of this Welsh vineyard of the nineteenth century lead to the establishment of that at Swanbridge, which "was calculated to produce a vintage of 25 or 30 hogsheads of wine" in 1897 (*Journal of Horticulture*, October 24th, 1897, page 357)?

From the facts to hand it appears that the climate of England and Wales was as good or better from the middle of the present century as in the time of the Normans and Romans for growing Grape Vines in the open, and the Grapes from them for making palatable wine. I say *better*, for at the Roman period immense tracts of country were fens, marshes, and swamps, and though the conqueror of the world did much to improve Britain and the Britons, there remained much to be done in the way of draining and reclaiming land at and after the Norman conquest. Hence the whole land must now, from the great improvements that have been carried out, be warmer and drier than in Roman, Anglo-Saxon, Norman, and up to

the reign of George III., when vineyards in England fell into abeyance, and the wars caused by the French revolution (1795-1814) led to an extraordinary improvement in agriculture all over the country through the high price of agricultural produce. Still the fact remains that the alterations would improve the climate of this country rather than make it colder or wetter, hence more suitable than it had ever been in historical times for the outdoor cultivation of the Grape Vine and the produce thereof capable of making wine.

Now that land cannot, according to the prevalent ideas and practices of agriculturists, be made to pay under ordinary crops, why not devote a portion to vineyards? We have it on record that Sir Henry Littleton made excellent wine from Grapes grown in a warm nook at Over Ashby, in Staffordshire. Begin there, or at the Trent, in the southern part of Derbyshire, and let that point express the northern limit of vineyard experiments to be instituted. Let sunny slopes—such as are too steep for ordinary agricultural or horticultural purposes—be selected, terrace the sites so as to facilitate cultural operations and catch or hold rains in summer, with grips to run off the superfluous water in winter, and on these demonstrate that the climate of England has not declined in temperature or the soil of this country deteriorated in respect of the growth of Grape Vines and the Grapes they produce for making wines of full body and rich bouquet. Make choice of the gravelly or sandy and dry soils that now grow scarcely anything but worthless scrub, and see how Grape Vines will flourish. Make no question about sites—there are thousands awaiting the husbandman to make them smile with plenteousness of fruit and wine. The Neve, the Welland, the Great Ouse, the Severn and its tributaries, the Lea, the Thames, the Medway, the Stour, the Arun, and many other rivers of the southern part of England and Wales, still flow on, their courses deeper, their slopes less slanting, and the hills they drain not much lower, while the soil of the valleys remains as rich, or richer, as in bygone times.—G. ABBEY.

(To be continued.)

WELL RIPENED ONIONS.

I AM sending you a sample of Ailsa Craig Onions, grown by Mr. James Riddell, gardener to T. G. Gibson, Esq., Lesbury House. Some little time ago, when at Lesbury, I saw a lot of splendid Onions, large in size, excellent in form, and, from the way they were keeping, giving every evidence that they had been thoroughly well ripened. Mr. Riddell is an "expert" in Onion growing, and not only carries off the first prize annually for Onions at the Alnwick Horticultural Society's Show in September, but never fails to produce a crop of fine large well-finished specimens. Many prefer small Onions to large ones, and one of the reasons often given is that they keep better; but you will see from the enclosed that even in Northumberland bulbs can be grown to a good size and keep well. Mr. Riddell's plan is to sow the seed under glass in January, and grow the plants in boxes until planting out time.—N. N.

[The Onions received are remarkably fine, true to name, and solid. Their keeping properties shall be further tested. Large Onions are objected to by economical cooks, because when they only want an ounce or two they do not like to spoil a bulb weighing a couple of pounds by taking a slice off it. For ordinary culinary purposes they prefer to have variously sized Onions to pick from. Commercially speaking, Great Britain pays some £750,000 a year for imported Onions, many of which are not equal to the samples before us as grown in Northumberland.]

THE SEASON AND THE FLOWERS.

SOME time ago a friend in a border county wrote, "The wood is white with the Snowdrops I planted." Later he said, "Crocuses are of no use; the bloom is completely spoiled." Considerably farther north the Snowdrop had but a poor time of it, and the Crocus was blown, battered, and frozen unmercifully; the yellows made some appearance, although often peering through a covering of snow: the latter colours were seen and little more, being caught in a spell of weather compounded of samples of every sort except the mild and genial. Scillas have braved it fairly well, and the bright eye of the *Chionodoxa* still sparkles in the chilly blast. But a more unfavourable season for flowers could scarcely be imagined; the biting north winds and frosty nights make their struggle a hard one. The Tulip stands still, and even the *Auricula* under protection scarcely advances, the truss being now much where it was three weeks ago. At the present rate of progress the general bloom of this flower will be in June.

Outside, the flower of the Daffodil seems to cower among the foliage, which is yet scanty enough, that of the Barri and Leeds section looking especially attenuated both in those planted last autumn and of the longer established beds. With a change to more favourable weather the later Daffs might yet do fairly well, but in any case the bloom must now be a light one. Is it to tantalise, or ought one rather thankfully to accept it as a compensation, that the colour seems richer than usual? Rarely has *pallidus præcox* been so fair; seldom has Sir Henry Irving donned a richer robe, or Golden Spur been so worthy of its name.—A NORTHERN AMATEUR.

FIGS IN POTS.

It is surprising what an amount of feeding Figs in pots will take when healthy and full of fruit. Though when started early in the year they seem to have ample room in the pots, it soon becomes evident that something more is needed when the crop on the young shoots begins to swell. Some pot trees of St. John's Fig pinched a week since are now pushing up the fruit. They had a thorough top-dressing of rich loam, an artificial rim of this material being packed round just inside the rim of the pots, and in less than a fortnight the roots pushed through this in all directions, searching out the bonemeal that was sprinkled among the loam.

I am sure there is no more fruitful cause of the Figs dropping when half grown than starvation treatment combined on occasions with over-cropping. The work a healthy well-cropped Fig tree has to do at this season is considerable, and the roots eagerly search for whatever is given in the way of food. Observation of this should show cultivators when the feeding is needed, for the tree reads one as plain a lesson as possible. Another very frequent cause of failure with forced Figs is keeping them thickly placed in warm, moist houses, and before properly hardening, turning them out in the full sun. The leaves are then often browned and scorched, so cannot perform their due functions, and this is a serious check to the trees.—B. S. E.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—APRIL 18TH.

It is more than probable that a better display than that presented at the Drill Hall on Tuesday has never been excelled for beauty and interest at this season of the year. The number of entries was remarkably high, and, so far as flowers and foliage plants were concerned, there were variety and excellence of quality in an exceptional degree. Narcissi made a show in themselves, as did Roses and gorgeous Tulips. Orchids again easily maintained the high standard that is now expected at these meetings. Save for Mr. Bunyard's splendid collection of Apples the Fruit and Vegetable Committee had little before them.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. R. Parker, J. H. Veitch, J. Cheal, W. Poupert, E. Shaw-Blaker, A. H. Pearson, W. Pope, A. Dean, S. Mortimer, W. Farr, G. Woodward, C. Herrin, W. Bates, F. Q. Lane, A. F. Barron, W. J. Empson, G. Wythes, H. Balderson, W. H. Divers, J. Willard, and R. Fife.

Messrs. G. Bunyard & Co., Maidstone, staged a magnificent collection of Apples in about one hundred dishes. All of the varieties were in splendid condition, illustrating once again the capabilities of the Maidstone fruit room. Early and late sorts were represented, and received at the hands of the Fruit Committee a silver-gilt Knightian medal.

Mr. S. Mortimer, Farnham, contributed a dozen boxes of Tomatoes all of a new variety named Winter Beauty. One box contained the bunches of fruits and the other single specimens, but all alike were of great excellence. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, sent grand Figs Pingo de Mel and St. John, and some splendid Asparagus from open air beds. Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, sent Pea Carter's Early Morn, which ought to be of value for early use.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, C. T. Druery, O. Thomas, H. B. May, R. Dean, J. H. Fitt, G. Nicholson, W. Howe, J. Jennings, R. B. Lowe, T. Peed, R. W. Ker, J. Fraser (Kew), G. Paul, W. Bain, J. D. Pawle, C. A. Fielder, H. J. Cutbush, J. W. Barr, E. T. Cook, E. Beckett, T. W. Sanders, D. B. Crane, E. H. Jenkins, C. Blick, H. S. Leonard, H. J. Jones, H. Turner, and E. Mawley.

An attractive semicircular group was arranged by Mr. H. B. May, Upper Edmonton. It comprised Crimson Rambler Roses, Spiræas, and Hydrangeas, with Acers and Ferns. The plants were carrying excellent flowers. A bright exhibit was that contributed by Messrs. J. Carter & Co., High Holborn. It consisted wholly of Cinerarias, single varieties, dwarf and bushy in habit, and carrying flowers of high quality, and doubles not so diversified in colour, but equally attractive and interesting. Mr. Brown, gardener to Sir Francis Berry, St. Leonard's Hill, Windsor, staged a collection of Camellia flowers cut from plants growing in the open ground. The varieties numbered forty, and the colours were rich and clear. The large stout foliage was deep green in hue, and spoke of the rudest health. They will go far with visitors to demonstrate the hardiness of the Camellia.

The 130 pots of Dutch Tulips, representing 160 varieties, sent by Messrs. W. Paul & Son, Waltham Cross, lent colour and attractiveness to the exhibition. The flowers were not particularly large, but they were of rich colour, and rose above healthy leafage. All the best known double and single varieties were represented, and this fact makes the mention of names unnecessary. Mr. R. Fyfe, gardener to Lord Wantage, V.C., Lockinge Park, Wantage, exhibited a number of blooms of Fortune's Yellow Roses. They were of superb quality, large in size, and rich in colour. It is seldom that this Rose is seen in such splendid condition. Mr. G. W. Piper, Uckfield, sent Tea Rose Sunrise—a variety exceptionally rich in colour, and of good form. Messrs. R. Wallace & Co., Colchester, were represented by a small collection of flowers, including Fritillarias, Erythroniums, Irises, Anemones, and others.

Mr. J. Arkwright, Hampton Court, Leominster, staged a number of plants of Primrose Evelyn Arkwright, a large flowered variety that is now comparatively well known. The same exhibitor also showed a small collection of Primulas. Messrs. Sutton & Sons, Reading, sent a group of

Cineraria stellulata, representing a wider range of colour than is commonly seen. It may reasonably be expected that when these become better known they will be accorded a very large share of popularity for their graceful habit and the splendid lasting properties of the flowers. Mr. J. Russell, Richmond, contributed a small group mainly composed of Azaleas, Staphylea colchica, Lilacs, and Wistaria sinensis. Mr. Bain, gardener to Sir Trevor Lawrence, Bart., Dorking, showed some magnificent Anthuriums, with a few Begonias.

Indian Azaleas from Messrs. R. & G. Cutbush, New Southgate, made a brilliant stand, and attracted much admiration. The varieties were fairly numerous, and the colours ranged from pure white to the deepest crimson. Messrs. G. Jackman & Sons, Woking, sent an interesting exhibit, largely composed of Primulas, but including also Daffodils and hardy herbaceous flowers. Mr. D. Kemp, gardener to W. Bryant, Esq., Stoke Edith Park, Slough, was represented by a collection of Amaryllis (Hippeastrums). The plants were very large, and producing immense leaves and spikes of grand flowers. The miscellaneous plants from Messrs. W. Cutbush & Son, Highgate, were very charming, and merited the admiration they received. There were Ericas, Oranges, Boronias, Acacias, and others.

Mr. W. Rumsey, Joynings Nurseries, Waltham Cross, made a most attractive display with Roses, both on plants and in boxes. The plants in pots were clean and healthy, and carrying richly coloured, while the blooms in boxes were well above average merit. Messrs. B. S. Williams & Son, Upper Holloway, exhibited in a large group of miscellaneous flowering and foliage plants some magnificent Vandas, Ericas, Clivias, Acacias, Ferns, Palms, and others. Messrs. Paul & Son, Old Nurseries, Cheshunt, sent Roses in pots—small plants carrying fine flowers—and also Rosa Wichuriana variegata, a variety that will evidently travel a considerable distance in one season.

Messrs. J. Peed & Son, Roupell Park Nurseries, Norwood, showed a group in which such foliage plants as Caladiums, Dracenas, Ferns, and Asparagus were most prominent. Messrs. J. Laing & Sons, Forest Hill, made a very bright display with various plants. Amongst the most conspicuous were Azaleas, Ericas, Clivias, Lilioms, Boronias, Cyclamens, a few Orchids, with numerous foliage plants. Messrs. J. Veitch & Sons, Ltd., Chelsea, sent some splendidly flowered plants of Spiraea astilboides compacta. Messrs. Collins Bros. & Gabriel, Waterloo Road, staged a large collection of Polyanthus.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, S. Courtland, J. Colman, E. Ashworth, W. H. White, E. Hill, H. T. Pitt, J. Jaques, F. J. Thorne, F. Sander, T. W. Bond, W. H. Young, A. Outram, H. Little, J. T. Gabriel, H. J. Chapman, H. Ballantine, de Barri Crawshaw, J. G. Fowler, and T. B. Haywood.

Mr. W. A. Bilney, Fir Frange, The Heath, Weybridge, showed a small collection of Orchids, in which Dendrobiums were attractively conspicuous. The exhibit also included Cattleyas, Cypripediums, Phaias, and Cymbidiums. For the fourth year in succession Mr. F. J. Thorne, gardener to Major J. Joicey, Sunningdale Park, staged splendidly flowered plants of Epidendrum (Diacrium) bicornutum, together with a few other admirably grown Orchids. Messrs. Hugh Low & Co's group of Orchids from Upper Clapton was very bright, and contained many splendid flowers. There were Odontoglossums, Dendrobiums, Cattleyas, and others, all in first-rate condition. The Cymbidium Lowianum in the group from Mr. Whiffen, gardener to J. Bradshaw, Esq., Southgate, were finely grown. This exhibitor sent also some Odontoglossums in good variety, as well as other Orchids.

Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., was represented by a very effective group. There were Odontoglossum Andersonianum, O. coronarium miniatum, O. Edwardi, O. Ruckerianum, Calanthe veratrifolia, Miltonia cuneata grandiflora, Cymbidium Devonianum, and several others. The most attractive exhibit in the Orchid section was that from Messrs. J. Veitch & Sons, Ltd., Chelsea. The several plants of which the group was composed were in the best of health, and represented some of the best Orchids now in bloom. We cannot name all, but may mention Cattleyas, Dendrobiums, Miltonias, Calanthes, Oncidiums, Cymbidiums, Epidendrums, Lælias, Cypripediums, and Odontoglossums as amongst the most prominent.

Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, sent some superb spikes of Odontoglossums, and several other growers contributed to the display by sending small exhibits.

NARCISSUS COMMITTEE.—Present: The Rev. G. Engleheart (in the chair); with Miss Willmott, and Messrs. J. Walker, A. Kingsmile, G. S. Titheradge, S. A. de Graaff, R. Sydenham, P. R. Barr, J. Pope, and A. Scrase Dickens.

Messrs. Barr & Sons, Covent Garden, showed a comprehensive display of Daffodils, beautifully staged with their own foliage. The collection comprised Mrs. Norma Crosfield, Madame Plomp, incomparabilis plenus, Glory of Leiden, cernuus, Catherine Spurrell, Victoria, Sulphur Phoenix, Mrs. Langtry, Orange Phoenix, Weardale Perfection (a fine form), Red Coat, Duke of Bedford, Dr. Fell, and intermedius Sunset.

Messrs. T. S. Ware, Ltd., Tottenham, staged a good collection of hardy spring flowers, consisting of Daffodils, such as Emperor, Victoria, Madame Plomp, Horsefieldi, Madame de Graaff, albicans, and Sir Watkin; Primulas Sieboldi, lilacina, denticulata, and S. rosea striata, with a good strain of Polyanthus, Erythroniums, Violet sulphurea odorata, and Adonis vernalis. Messrs. J. Veitch & Sons, Chelsea, exhibited a pretty table of Daffodils, arranged with pots of Maidenhair Fern. The chief forms were Princess, Empress Victoria, Emperor, Horsefieldi, Burbidgei, Flora Wilson, C. J. Backhouse, Princess Ida, Fred Moore, Sir Watkin, and Golden Plover. The flowers presented a very bright and spring-like appearance.

Messrs. Pearson & Sons, Chilwell, Nottingham, also staged a display of fresh bright blooms, arranged in a very free style, which contributed to make up a good effect. The following forms were particularly noticeable—Leedsi superbus, maximus, Princess Ida, Empress, Her Majesty, Queen Bess, albicans, Minnie Hume, Horsefieldi, Santa Maria, and triandrus albus. Mr. R. H. Bath, Ltd., Wisbech, contributed a capital collection of Daffodils, the flowers were large, well coloured, and very fresh. The chief forms were Victoria, Madame Plomp, Horsefieldi, maximus, Wm. Goldring, M. J. Berkley, Mrs. Thompson, Mrs. W. T. Ware, Queen of Spain, cernuus puleher, Empress, Grand Duchess, and Barri conspicuus.

Mr. J. W. Jones, Invermore, Woking, staged a pretty little group of Daffodils, comprising such forms as Sir Watkin, Empress, Queen Bess, Emperor, cernuus, Mrs. Elwes, Minnie Hume, and Beauty. The Rev. G. H. Engleheart, Appleshaw, Andover, exhibited a group of hybrid and seedling Narcissi, which comprised many fine forms; Herrick, Sidney Edmond's White, Dubloon, Cassandra, a grand form of the poeticus type, the white being clear and satiny, Chaucer, Juliet, and Mistrel of the same type, were also very conspicuous. Mr. Bennett-Poe, Homewood, Cheshunt, staged a choice collection, including Duchess of Brabant, Edward Hart, Frank Miles, Sims Reeves, maximus, and Jessica.

MEDALS.—Fruit Committee: Silver-gilt Knightian medal to Messrs. G. Bunyard & Co. Floral Committee: Silver-gilt Flora medals to Messrs. H. B. May and J. Laing & Sons; silver Flora medal to Messrs. Sutton & Sons, and silver Banksian medals to Messrs. J. Carter & Co., W. Cutbush & Son, D. Kemp, and R. Brown. Orchid Committee: Silver-gilt Flora medal to Messrs. J. Veitch & Sons, Ltd.; silver Flora medals to Messrs. W. H. White, B. S. Williams & Son, H. Ballantine, and J. Bradshaw; and silver Banksian medals to Messrs. H. Low & Co., W. A. Bilney, and F. J. Thorne. Narcissus Committee: Silver-gilt Flora medal to Messrs. Barr & Sons; silver Flora medal to Messrs. J. Veitch & Sons; and silver Banksian medal to Messrs. R. H. Bath, Ltd.

CERTIFICATES AND AWARDS OF MERIT.

Anemone blanda cypriana (W. H. Divers).—A lovely dwarf plant, producing pure white flowers with a reverse of bright blue (first-class certificate).

Anthurium Perfection (W. Bain).—A magnificent plant, with large fiery scarlet spathes (first-class certificate).

Dendrobium Cliv. *Vine House variety* (A. Warburton).—A grand variety of the type; the sepals and petals are very rich in colour (award of merit).

Erythronium Johnstoni (R. Wallace & Co.).—This Dog's Tooth Violet has medium sized flowers of a bright rose colour (award of merit).

Masdevallia Shatttryana, *Chamberlain's variety* (W. H. White).—A lovely Orchid, of which the colour is clear mauve spotted with crimson at the base, the tails are yellow (first-class certificate).

Narcissus Pope's King (Pope & Son).—A superb variety of pure yellow colour; the large trumpet is very deep (award of merit).

Narcissus intermedius Sunset (Barr & Sons).—This is of the small cupped section. The perianth segments are yellow and the crown orange (award of merit).

Narcissus Duke of Bedford (Barr & Sons).—A superb bicolor; the trumpet is of immense breadth and substance (award of merit).

Narcissus Brigadier (G. H. Engleheart).—A refined bicolor; the broad perianth segments are pale cream and the crown bright yellow (award of merit).

Narcissus Edmonds' White (G. H. Engleheart).—One of the medium cupped section. The perianth segments are white, and the fringed cup lemon yellow (first-class certificate).

Narcissus Cassandra (G. H. Engleheart).—A superb variety of the poeticus section. The colour is pure white, and the edge of the crown dark crimson (award of merit).

Narcissus Strongbow (G. H. Engleheart).—A striking form. The colour is pure white and bright yellow (award of merit).

Narcissus Flambeau (G. H. Engleheart).—A very bright flower, especially the crown, which is brilliant orange scarlet. The perianth segments are yellow (award of merit).

Odontoglossum Andersonianum obtusifolium (C. J. Lucas).—This variety has a cream ground colour with spots and patches of dull brown (award of merit).

Odontoglossum Andrianæ Lady Wigan (W. H. Young).—The basal colour of this variety is cream, and the whole of the flower is profusely spotted with bright brown. The sepals and petals are wavy in outline (award of merit).

Odontoglossum crispum Ashworthianum (H. Holbrook).—This is a superb variety. Almost the whole of the upper sepals and petals are dull crimson with white edges; on the lower sepals and the heavily fringed lip there is more white (award of merit).

Pea Carter's Early Morn (W. J. Empson).—A dwarf growing variety that is valuable for early cropping (award of merit).

Tomato Winter Beauty (S. Mortimer).—A free cropping variety producing medium-sized fruits of bright scarlet colour. The flavour is very good (award of merit).

THE MIDLAND DAFFODIL SOCIETY.

APRIL 13TH AND 14TH.

THE initial show of this Society was held under somewhat unpropitious circumstances so far as the weather was concerned; but there was a large attendance of visitors on the first day to enjoy, perhaps, the best exhibition of its kind ever held in the Midlands. Unfortunately, the

almost continuous fall of rain on the second day adversely affected the attendance. Fears had also been entertained for some weeks past that the wintery weather of March would materially affect the exhibition, but these were not realised, as the whole of the space was filled to repletion, and the honorary and trade displays being even more *en evidence* than at any spring show yet held in the Edgbaston Botanical Gardens. In the evening of the first day Mr. R. Sydenham entertained the judges and others to a dinner.

A Daffodil conference, presided over by the Rev. G. H. Engleheart, held in the library of the Botanical Gardens on the morning of the second day, was well attended, and various suggestions were submitted and debated regarding the future arrangements of the Society, as well as an instructive discussion on the culture and hybridisation of the Narcissi. The Rev. G. H. Engleheart's large stand of hybrid Narcissi was an object of much attention, and F.C.C.'s were deservedly awarded to three new seedlings of high merit—viz., Edmond's White, having a fine yellow trumpet, with an excellent white perianth; Firefly, a name suggested by the brilliant red cup, and the perianth composed of pure white; and Incognita, a remarkable flower, with a very large white perianth, and wide, rich orange-red cup. The two latter varieties were of the Poeticus section. A F.C.C. was also deservedly awarded to Messrs. Barr & Sons' Duke of York, almost a second Weardale Perfection.

CUT BLOOMS.—There was only one entry in the class for a collection of Narcissi, not less than fifty varieties (not to include the Polyanthus section), representing the three groups—Magni Coronati, Medio Coronati, and Parvi Coronati, one vase only of each variety, containing not less than two or more than twelve blooms, and the first prize, an elegant silver cup, value £7 7s., offered by Messrs. Barr & Son, London, was awarded to the Rev. J. Jacobs, Whitechurch, Salop, for an excellent exhibit. For twelve distinct varieties of true Trumpet Daffodils (not less than three or more than five blooms of each) the first prize was awarded to Mr. W. J. Grant, Newport, Mon., and the second to Messrs. John Pope & Son, King's Norton Nurseries, and the third to Mrs. M. B. Crawford, Ardnamont, Kyles of Bute. For six varieties the first prize was secured by J. C. Williams, Esq., Caerhays Castle, St. Austell; the second by R. Cartwright, Esq., Selby Park, Birmingham; the third by Miss Fanny Currey, Lismore, Ireland; the fourth by P. D. Williams, Esq., Lanarth, St. Keverne; and the fifth by Mr. J. T. White, Spalding. There were thirteen exhibits, and the blooms in the first and second prize stands especially were of grand quality.

For twelve distinct Medio Coronatis Miss F. Currey was to the fore with an excellent exhibit; the second prize being awarded to Mr. W. J. Grant; the third to P. D. Williams, Esq., and the fourth to Messrs. John Pope & Son. For six distinct varieties, Messrs. J. C. Williams, St. Keverne, H. B. Young, Lincoln, R. C. Cartwright, R. T. Mills, Tipton Grove, Chesterfield, and J. Mallender, Hodsock Priory, Worksop, Notts, were awarded the prizes in the order named.

In the class of twelve Parvi Coronatis, Messrs. W. J. Grant and Isaac Cooke, Shrewsbury, were respectively first and second prizetakers, and were the only representatives, their blooms presenting a very pretty and chaste effect. For six varieties the first prize was awarded to Mr. P. D. Williams, the second to Miss F. Currey, the third to Mr. J. C. Williams, and the fourth to Mr. R. C. Cartwright.

For twelve varieties of Tulips, arranged for effect, six blooms in a bunch, with their own foliage, Messrs. R. C. Cartwright and Robert Sydenham were the respective winners, with excellent examples. For six varieties Miss E. M. Sharp, Edgbaston; Mr. J. Sceany, Harborne; and Mr. A. Cryer, gardener to J. A. Kenrick, Esq., Edgbaston, were the prizetakers in the order named. Mr. R. Sydenham (the only exhibitor) was awarded the first prize for a collection of Spanish Irises arranged for effect.

PLANTS GROWN IN POTS.—For twelve pots of any varieties of Daffodils (Polyanthus section excluded), the first prize was easily won by Mr. R. Sydenham with an excellent exhibit. Messrs. Isaac Cooke, A. Cryer, and A. W. Hulse, Beech Lane, Edgbaston, were placed as in the order named with good examples. For six pots Mr. R. C. Cartwright secured the first prize and an "award of merit," the second position falling to Mr. G. Stacey, gardener to Mrs. Whitmore, Edgbaston; the third to Mr. J. Sceany, the fourth to Miss E. M. Sharp, and the fifth to Mr. C. Knight, Harborne. For six pots Polyanthus Narcissus the respective winners were Mr. R. Sydenham, Mr. Isaac Cooke, Miss E. M. Sharp, Mr. A. Cryer, and Mr. G. Stacey.

For six pots single Tulips, distinct, Messrs. R. Sydenham, A. Cryer, R. C. Cartwright, and G. Stacey were placed in the order named. Lilies of the Valley proved an attractive feature, and for six pots, not exceeding 7 inches in diameter, the first prize was awarded to Mr. A. Cryer, the second to Mr. I. Cooke, and the third to Mr. R. Sydenham. For six pots of Cyclamens the first prize was secured by Mr. E. J. Mustin, gardener to A. F. Bird, Esq., Moseley, and the second to Mr. Isaac Cooke. For six pots of Liliun Harrisii the only exhibitor was Mr. A. Cryer, with excellent examples, and to which the first prize was awarded. Cinerarias formed a very attractive feature. For four pots Messrs. E. J. Mustin, A. Cryer, and I. Cooke were the respective winners.

For Mr. R. Sydenham's prizes for three bowls or jars of Polyanthus Narcissus, grown in cocoa-nut fibre without drainage, the first prize was awarded to Mr. J. Cooke, the second to Mr. R. Sydenham, and the third to Miss E. A. Sharp. For any other variety of Daffodil the prizes were awarded as in the previous order. For Messrs. Thomson & Co.'s special prizes for six Cinerarias in pots, Messrs. E. J. Mustin, A. Cryer, and A. W. Hulse were the respective winners. For four Calceolarias in pots Messrs. E. J. Mustin and A. Cryer had splendid examples, both in foliage and bloom.

Table decorations, 6 feet by 3 feet, arranged with any varieties of cut Daffodils and foliage, formed a very attractive feature. The first prize was easily taken by Messrs. Pope & Sons with an elegant arrangement, and the second and third prizes to Mr. E. J. Mustin and Miss E. C. Swinden, Edgbaston. For a group of cut Daffodils or Tulips arranged on a round table, suitable for a hall or drawing-room, Miss Swinden was the first, Mr. Seeany the second, and Mr. E. J. Mustin the third prize winners. For a bowl of cut Daffodils Mr. R. Sydenham and Mr. A. Cryer were the first and second winners, while Miss Swinden secured the third prize. Bouquets of Daffodils were tastefully arranged, and Messrs. Pope and Sons were to the fore with a most graceful example, the second prize going to Mr. J. Cooke, and the third to Mr. A. W. Hulse.

HONORARY AWARDS.—Silver-gilt medal: Messrs. Barr & Sons, Covent Garden, for collection of Daffodils. Silver medals: R. H. Bath (Limited), Wisbech, collection of Daffodils; Messrs. Hogg & Robertson, Dublin, Daffodils and Tulips; T. S. Ware (Limited), Tottenham, Daffodils; Hewitt & Co., Solihull, floral decorations. First-class certificates: Dicksons (Limited), Chester, for Golden-leaved Holly Golden King; Rev. G. H. Engleheart, Appleshaw, Andover, for seedling Daffodils Incognita, Firebrand, Edmonds' White; Pope & Sons, King's Norton, for Primula obconica Snowflake; Richard Dean, Ealing, Campanula Balchiniana; Pope & Sons for Daffodil "Pope's King." Bronze medal: Simpson & Sons, Birmingham, collection of bulbous plants, grown in Jadoo fibre; Dicksons (Limited), for collection of Daffodils; R. Sydenham, collection of bulbous plants, grown in cocoa-nut fibre refuse and shell without drainage.

AURICULA AND PRIMULA SHOW.

APRIL 18TH.

THE exhibition of the National Auricula and Primula Society was held at the Drill Hall on April 18th, and proved a good show in every respect—in fact, it was much better than was expected by the exhibitors themselves.

In the class for twelve plants dissimilar, Mr. Jas. Douglas, Great Bookham, Surrey, was placed first with a very even exhibit. The varieties were Mrs. Potts, Highlier, Dinham, George Rudd, J. Hannaford, Acme, G. Lightbody, Teresias, Lady Churchill, Cleopatra, Venus, and Rachel. Mr. C. Phillips, Bracknell, gained the second position with a good display of greys, which included Black Bess, Acme, Rachel, Geo. Rudd, Miss Barnett, and Marmion. Mr. W. Smith, Bishops Stortford, was placed third with good plants of Lord Lorne, Heatherbell, Mrs. Dodwell, and Shirley Hibberd. Mr. P. Purnell, Streatham Hill, was fourth and Mr. P. Worsley, Clifton, fifth.

There were four competitors for six plants, dissimilar, Mr. C. Phillips securing first position with good plants of Mrs. Henwood, Black Bess, G. Rudd, Rev. F. D. Horner, Mrs. Phillips, and Acme. Mr. J. Sargent, Cobham, was a very close second with Ruby, Acme, and Rachel, good. Mr. W. Smith was third, and Mr. P. Purnell fourth. In the class for four dissimilar plants, Mr. Euston, gardener to Mrs. F. Whitbourn, Ilford, was placed first with four good plants. Mr. A. R. Brown, Birmingham, came second, and J. T. Bennett-Poë, Cheshunt, third. Mr. A. R. Brown was placed first for two plants, distinct, Mr. Euston taking second place; Mr. Bennett-Poë third, and Mr. R. Holding brought up the rear.

The single plants, green edged, brought out six competitors, and Mr. P. J. Worsley was placed first with the Rev. F. D. Horner, Mr. J. Sargent second with Abbé Listz, Mr. A. P. Brown third with a fine plant of Mars, Mr. W. Smith fourth with a good seedling. The competition in the grey edges was marked by a better display, Mr. W. Smith being first with a good plant of Rachel, the same exhibitor second with Geo. Rudd, Mr. Sargent third with Rachel. There were eight competitors for the white edges. Mr. A. R. Brown was placed first with Acme, Mr. F. Sargent second with Heatherbell, Mr. W. Smith third with Mrs. Dodwell.

The self class appeared to be very popular, no less than fifteen plants being staged. Mr. P. Hemmell was placed first with a good specimen of Heroine, Mr. Chas. Phillips came second with Mrs. Phillips, Mr. P. Purnell third with Mrs. Potts. For fifty Auriculas, not less than twenty varieties, Mr. Jas. Douglas was placed first with a capital exhibit; the chief varieties employed were Mrs. Potts, Rachel, Phyllis, Black Bess, Ruby, Venus, and Geo. Rudd. Mr. C. Phillips was second with an even exhibit, with good specimens of Yellow Leg, Mrs. Potts, Cecil Rhodes, Black Bess, Myra, and Richard Headley. The Hardy Plant Nursery, Guildford, was third with a very neat exhibit.

For twelve Alpines Mr. C. Phillips was ahead with a beautiful exhibit. Mrs. C. F. Barnett, Saturn, Gladys, Lady Clementina Walsh, and Mrs. Martin Smith appeared the best specimens. The Guildford Hardy Plant Nursery was second with well developed plants of Dean Hole, A. Maxwell, J. Gilbert, and Ganymede. For six Alpines, dissimilar, Mr. C. Phillips was first with Topsy, Myra, and Perfection. Mr. Euston came second with good bright colours, and Mr. Jas. Douglas third. For four plants, dissimilar, Mr. A. R. Brown secured first position. Mr. P. Purnell came second, and Mr. R. Holding third.

For twelve Fancy Auriculas the Hardy Plant Co. secured first place with good representatives of Old Gold, Russet, Innocence, Belle, and a few seedlings. Mr. Jas. Douglas was second with some good yellows, such as Safrano, Golden Oriole, Buttercup, and New Guinea. Mr. Euston third. For a single specimen of Alpines, gold centre, Mr. Chas. Phillips was first with Evelyn Phillips. The same exhibitor was second with the same variety, Mr. P. Purnell third with Dean Hole. In the class for single specimens, with a white or cream centre, Mr. C. Phillips was first with Perfection,

Mr. Phillips second with the same variety, Mr. J. W. Euston third with Echo.

For twelve Polyantheses, Mr. Jas. Douglas was placed first with a bright and varied collection. The same exhibitor was again successful in the class for twelve Primroses with some very distinct colours. Mr. P. Purnell was first for twelve Primula species, distinct, which comprised obconica, Sieboldi, denticulata alba, verticillata, and rosea. Mr. Jas. Douglas was first in the class for six species.

For a basket of Primroses, Miss Jekyll, Godalming, was placed first with a beautiful exhibit, composed of yellows and whites in varying shades. Mr. Jas. Douglas was third with a very good basket. For a group of Primulas or Auriculas, Mr. P. Purnell was well ahead with an exceedingly bright and varied exhibit. The Guildford Hardy Plant Nursery Co. were second, relying solely on Fancy Auriculas, in a good variety of colours.

THE YOUNG GARDENERS' DOMAIN.

A WORD TO THE WISE.

IN reading the articles in the "Young Gardeners' Domain" week by week one realises how few of the writers attempt to give the results of experience or discuss the various phases of vegetable production. I have more than once heard young men declare that all kitchen garden work can be "picked up" from such and such a publication. This, of course, can only emanate from those who have never given more than a passing thought to one of the most important aspects of the gardener's work. Remonstrance is often useless, but there surely comes a time when they wish their youth had not all been divided between the glass department and the pursuit of pleasure in leisure moments.

We must remember that, as a rule, the vegetable garden embraces a number of fruit trees, bush fruits, as well as Strawberries, besides which the greater part of the supply of cut flowers is expected to be obtained from this source during the summer months. In some instances this may not be so, I am aware, but the rule obtains, and happy is the man who is prepared for all emergencies. I will go further than this, and say that after making due allowance for the beauty and interest attaching to the ownership and cultivation of a good collection of Orchids, or splendid decorative plants, hothouse fruits, and the usual adjuncts of the modern glass establishments, the backbone of most places is the kitchen garden.

See in the spring how everything, where the department is well kept, teems with life, and what may be described as a "forward movement." How necessary is it for a man to be alert and ready! This is not the time for reference to books. To know and to do must be the order of the day if work is not to lag behind. In dry weather the hoe will be kept going, seeds will be sown, whilst in a showery time advantage will be taken for planting out and thinning growing crops. In the early part of the year provision will have been made for each successive occupant of the land—so much room for this, and so much ground for that. In summer and autumn comes the harvest, the ingathering of crops and the storing for use during the dark days of the year. What shall we say of winter! the time of all others when to the casual observer all seems flat and uninteresting. To the enthusiastic gardener it is nothing of the kind. Then is made one of the great efforts of all, for the days are short, time is precious. The weather, too, at that season often retards progress and causes work to be delayed. It is the season too, when the gardener seeks to put in order that "pantry" of plant life Mother Earth, by cultivation and the filling with all good things necessary for subsequent growth. The winter rain, the frost and snow, will aid; but the man must do his part, with the spade, with manure, and, let it not be forgotten, his brains.

"Take no thought for to-morrow," would certainly be poor advice for the kitchen gardener. He must prepare for this year and the next, and have, if possible a glance left for a look into another beyond that even. He learns according to the locality in which he may reside to make a rough calculation as to the weather. It may be far from correct, but it will often serve for a guide, whilst those who are less observant are caught. The really earnest man becomes somewhat of a chemist, and learns to know the action of different manures, both natural and artificial, and will find out what kinds suit his ground the best. Then there are the hundred and one pests, both feathered and insect, that infest gardens, and it will be wise to become acquainted with the best methods of preventing their attacks, and the surest remedial measures to be taken after the preventive stage has been passed. All this, and a great deal more, must the kitchen gardener be cognisant of ere he is worthy the name of such. Yet some of our young men tell us they can learn it all from books, and that easily.

Let none, however, misunderstand me. I do not decry the use of good works on gardening, quite the contrary. Happy is the man who has access to standard books on any given subject, and also to the periodicals which are published every week, and increase in numbers year by year. In this way a man keeps up to date, his ideas broaden and strengthen, or should do so, and thrice blessed is he who not only reads but can retain and assimilate. These few remarks on reading apply not only to work outside; in every branch of horticulture it is necessary to keep abreast of the times, and I care not who the man may be, if he observes nothing but what goes on inside his own garden walls, sooner or later he falls behind.

Of course, as there are different kinds of gardens, so there are all sorts of men in them. We see a man armed at all points, who, should a difficulty arise, will fairly stamp and trample the trouble out of existence. Such men know how important it is to be prepared for contingencies. If late spring frosts threaten breadths of early Potatoes, some means of

protection will be at hand in the shape of litter, or netting, mats, or anything which can be pressed into temporary service. So one might go on, but it is not in my province to enumerate the many instances in which the strong and persevering succeed and the weak and indolent fail. I might have enlarged on the subject of fruit, how one should become master of the knowledge of tree lifting, root pruning, and so on; all this comes to most of us sooner or later, and it is wise to be ready.—J. SHALFORD.

[Though still a "young gardener," our correspondent is now in a position of responsibility, and has, no doubt, experienced the advantage of the knowledge he advocates in the interests of young men who will sooner or later appreciate its value.]

FORMATION AND CROPPING OF A KITCHEN GARDEN.

WHERE the soil and locality are suitable the kitchen garden ought to be on the north side of the mansion. The principal walk leading from the pleasure grounds to the garden should be made as interesting and attractive as possible. The main entrance may be so chosen so that visitors get views of the most interesting and effective parts of the garden.

After selecting the site, which where possible should have a gentle slope towards the south. This point, however, is not an essential one, as we find many gardens entirely flat, yet under skilful management, they yield abundance of fruit and vegetables. The size or extent of the garden, like that of its distance from the mansion, must in a great measure depend on the taste of the owner, the number of family, and the demands of the establishment in general. The produce required will serve as a basis on which to form our future plans. It would not be possible to recommend one plan that would be applicable to all, as local conditions must be considered. When the outlines of the garden have been decided, the level of the ground or the slope thereof must be determined. I am greatly in favour of enclosing the garden within walls, as these afford shelter from cold winds, and thus provide protected borders that will be valuable for early crops.

Drainage is an operation which must precede trenching and other ground work. It sometimes occurs that land is naturally too dry when, of course, artificial drainage would be a mistake, but in most cases it is absolutely essential for the improvement of the soil and the subsequent benefit to the several crops. Before laying the main drains the principal walks should be marked out and the mains conducted under the centre of each one. The foundation of the walks can be made with whatever material may be at disposal, such as rough stones and broken bricks.

Walls that are to be used for fruit trees will require a border from 15 to 20 feet wide and 2 feet deep. For a south wall choose Peaches, Nectarines, Apricots and Figs; for a north aspect Morello Cherries, Gooseberries and Currants; for an east wall Pears, Plums and Cherries; and for a western aspect Apples, Pears and Plums. Fan-trained trees may be disposed 15 feet apart; horizontally formed 12 to 15 feet; and upright and diagonal cordons from 15 inches to 2 feet.

Apples, Pears and Plums may be cultivated as pyramids or half-standards, arranged round the central portions of the gardens, planting them from 15 to 20 feet apart and 4 to 6 feet from the walks, with bush fruits of Gooseberries and Currants planted alternately. Strawberries require a space of ground for their culture which should be properly prepared and manured. Select healthy and well-rooted runners in the autumn from fruiting plants, forming the rows from 18 inches to 2 feet asunder. Raspberries may be placed either in rows or clumps, and Gooseberries and Currants must also be provided, allowing a distance of from 9 to 12 feet from plant to plant. A suitable soil for fruit trees is a firm loam of medium texture, properly drained and well prepared. Top-dressings of lime, soot and wood ashes, and a quantity of mortar rubbish and charcoal, should be thoroughly incorporated with the soil. The greatest enemy to fruit trees is canker and gumming. As a means of prevention carefully plant healthy trees, encourage active fibrous roots near the surface, always keep the branches thinly disposed, so that the trees get the full benefit of the air and light, when they will eventually produce sound, matured and fortified growths. Avoid severe pruning, gross feeding, and over-luxuriant growth.

Before selecting the vegetable quarters make out a list of those which would be chiefly required, as this will serve as a guide in the arrangement of the ground at disposal. Each section may then be manured and deeply trenched, if the soil is deep enough to allow it, in accordance with the requirements of the crop that is to occupy it. If this work is done in the autumn the surface should be left as rough as possible.

The main object in view will be to maintain a supply of vegetables for as long a period as possible, and this will require a great amount of forethought and careful judgment. Deep working of the soil and systematic culture are essential, or the soil may be exhausted of its fertility long before it ought to be. The importance of doing all kitchen garden work thoroughly is shown more and more the longer it is practised.

I ought to refer to kinds and varieties as well as to cultural details on vegetables, but time forbids. I should like, however, to impress upon young gardeners that the reading of essays will not teach any gardener his work in the kitchen garden; such must be gathered from practical experience. Let us consider for a moment the collections of vegetables we find at our horticultural exhibitions. Such cultivation is not alone due to any special manures or choice seeds, but is generally the result, or I may say the essence, of untiring labour and strict attention in every detail of their culture, produced by skilful and intelligent management of men who possess both practical experience and perseverance.—(Abridged from the first-prize essay read by J. F. DONOGHUE, *Tranby Croft Gardens, Hull, before The Hesse Gardeners' Society.*)



FRUIT FORCING.

Vines.—Earliest House.—Early forced Vines usually contract red spider, when a timely washing of the leaves with a sponge moistened in a solution of soft soap—2 ozs. to a gallon of water, and with petroleum made soluble in it at the ratio of 1 fluid oz.—is the safest and best remedy, though rather a tedious process. Syringing, even between the bunches, with the clearest water spoils the appearance of the Grapes for market purposes, and employing sulphur on the hot-water pipes is sometimes attended with serious discolouration in white Grapes. Afford a thorough supply of water to the inside border, applying it early in the day, so that surplus moisture may pass off before closing time. A light mulch of dry material will prevent moisture arising prejudicial to the Grapes, but we use rather fresh yet well sweetened short litter from the stables, and it prevents the soil cracking and encourages surface roots. Early Grapes do not always colour well, the defect chiefly arising from overcropping, or continued hard forcing and attacks of red spider; it is only avoided by moderate cropping, rational treatment, and cleanly culture. A constant supply of rather dry warm air, but a comparatively low night temperature, will do much to assist heavily cropped Vines in colouring the Grapes. Where the Grapes are fully ripe a reduction in temperature is advisable, but 60° is essential to the after welfare of the Vines, and moderate moisture should be maintained for the benefit of the foliage.

Succession Houses.—The stopping and tying of the shoots must have attention. Where the space is restricted, stop the shoots two joints beyond the fruit; and as foliage is necessary to maintain root activity, leave the laterals on the shoot both above and below the bunch, or at least those from the two lowermost eyes, and those level with and above the bunch. Pinch these at the first joint, especially the ones from the basal leaves, also those above, unless there is space for extending the laterals, when they may be allowed to make two or three leaves, but no more growth must be encouraged than can have full exposure to light and air. After the space is fairly furnished keep the growth closely pinched to one joint as made. The great evil in Grape growing is overcrowding, which deprives the foliage of light and air, and restricting the growths is intended to avoid that and secure thoroughly solidified wood as it is made.

Tying Down.—It is a good plan to have the rods somewhat lower than the trellis, so that the side shoots have a slight incline upwards. In tying these in the places where they are to remain during the summer it is a common practice to begin to tie them down as soon as they are long enough to bend. This is not advisable unless as a precaution against injury from frost, as the shoots at this stage are so tender that the slightest twist the wrong way breaks them. It is a good method to defer tying down until the shoots are less sappy, which may be when the bunches are showing clear of the leaves or not until the shoots are stopped. Sufficient space should be left in the ligatures for the swelling of the growths. Stopping ought to commence when the leaf at the joint or place of pinching is the size of a halfpenny.

Vines in Flower.—Afford Muscats a free circulation of rather dry air, and a temperature of 80° to 85° or 90° by day from sun heat, 70° to 75° artificially, and 70° at night, falling 5° on cold nights. Raise the points of the bunches to the light, and liberate the pollen at midday by gently tapping the points of the bunches, or go over the bunches carefully with a large sized camel's hair brush, and afterwards dust them with another charged with Alicante pollen or that of some different and free setting variety. Hamburgs set freely in a lower temperature, but they are better for a little assistance from fire heat, say 60° to 65° at night, 70° to 75° by day, with 10° to 15° advance from sun heat, and other varieties are similarly aided during the flowering period.

Thinning Bunches and Berries.—It is advisable to make a selection of the best bunches, and leave only those required for the crop before they come into flower. This concentrates the forces on those retained, and by proper attention to fertilising the flower a good set and fine bunches are secured. Thinning the berries should commence as soon as they are set, especially in the case of the free setting varieties, and where fine specimens are required for exhibition it should be attended to whilst they are in flower. With the shy-setting sorts thinning should be deferred until the properly fertilised berries can be distinguished by their taking the lead in swelling. Remove surplus bunches, under rather than overcropping the Vines, as too heavy cropping is fatal to colour and finish.

Feeding.—When the Vines are in full leaf, and the Grapes swelling, they require abundant supplies of nourishment. Owing to the large extent of leaf surface the Vines evaporate enormous quantities of water under the influence of sunlight, and do most of the work then in assimilating the nutrient elements, the solid matters being left behind in the Vines, and with the carbonic acid gas derived from and fixed in the Vines as carbon, build up their structure solidly and healthfully. Stable, cow house, and manure heap drainings are excellent, being rich in available potash, and if a pound of mineral superphosphate be added to 30 gallons it is an advantage. The liquid must not be applied too strong, as an overdose injures, if not destroys, the young fibrous roots. Shankling also often follows packing the soil with organic matter held in suspension.

All the advertised fertilisers are excellent and handy. It is best to give the borders a thorough supply of water, then apply the fertiliser, and water in moderately. By this procedure there is no fear of losing any virtue the fertiliser contains, but when it is given on a dry border, and followed by a heavy watering, it is likely to be washed into the drainage, and roots be encouraged at the bottom of the border instead of near the surface. A light mulch of short, sweet, lumpy manure will be of advantage in keeping the border uniformly moist.

Late Houses.—The Vines are making rapid progress. Disbud and tie down the shoots as they require it. It is best to have the rods lower than the wires of the trellis, then the growths will only require tying out, and there is less danger of snapping, besides the shoots receive an equal supply of sap and have their points and the fruit-shows well up to the light. Close the house early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping the houses and syringing the Vines at closing time, but not after the bunches show. The latest houses of thick-skinned Grapes must now be started, giving them every encouragement to make growth, and set the fruit by the early part of June. Late Hamburgs are starting naturally, and need only have a little fire heat to exclude frost, but it is not advisable to allow the temperature to fall below 50°. Take care that the points of the shoots do not come into and remain in contact with the glass, or they may be scorched by sun or injured by frost.

Young Vines.—It will be necessary to afford a gentle fire heat in cold weather to keep the Vines in steady progress, otherwise they are best allowed to start naturally, and secure a short-jointed growth by free ventilation. Disbud, leaving the best shoots on both sides of the canes, and alternately at about 18 inches distance apart. The canes will have been depressed so as to cause them to break regularly down to the basal buds, when they can be tied in position. Crop lightly, one or two bunches being the maximum on permanent Vines. Any super-numeraries planted to fruit early, and afterwards be cut out, may carry a bunch on each shoot; six or eight bunches, however, are as many as vigorous Vines can bring to perfection.

THE KITCHEN GARDEN.

Kidney Beans.—The later crops of these in houses succeed best in long, narrow, moderately deep boxes. As pits or frames are cleared of early Potatoes these may be planted with Kidney Beans, raised in small pots in readiness. Mild hotbeds might in other cases be formed for growing Beans, with a view to relieving the houses of forced plants as quickly as possible. Hand-lights and rough frames ought also to be utilised for a similar purpose, abundance of early Beans never failing of appreciation. Two or three plants may be raised in each 3-inch pot, and they will make the best progress after they are planted if raised in gentle heat only.

Celery.—If the second early and maincrop plants are long left crowded in the seed pans or boxes they become spindly, and are slow in gaining strength. The earliest, or any wanted for planting out in May, are usually forwarded in frames over mild hotbeds; but in the case of successional plants that have been hardened in a cool house or frame, bottom heat may be dispensed with, though a little warmth at first is desirable. Set frames on a hard base, and in these place a layer, 5 inches deep after it has been trodden, of old hotbed manure not quite cold, and over this a thin layer of fine soil. Prick out the plants in this about 4 inches apart each way, arranging them in squares; give a gentle watering, put on the lights, and keep the plants close, shading from bright sun till they commence growing again. If kept well supplied with water the plants' progress will be fairly rapid, and in order to keep them sturdy admit abundance of light and air. When the time comes for moving them into the trenches they may be cut out each with a good square of soil and roots attached. Celeriac, or Turnip-rooted Celery, should be prepared similarly to ordinary Celery, only in this instance the final planting should be on the surface of good ground, not in trenches. If extra late Celery is desired, sow more seed now in hand-lights or boxes.

Onions.—Plants raised under glass, for providing handsome early bulbs, should be screened from cold easterly winds for a time after planting out. If raised thickly, and not pricked into other pans or boxes of soil prior to planting, the drawn plants should be lightly trimmed. Seed sown in the usual manner has germinated satisfactorily, and with favourable weather the plants will make good progress, especially if assisted by a dressing of soot between the rows. Nitrate of soda, applied carefully at the rate of 1 oz. to the square yard, also promotes a rapid, strong growth. There should be no undue delay in thinning the plants. They draw the most readily when quite small, and an early removal of all superfluous plants makes it much better for the rest. If the rows are 10 to 12 inches apart, and a heavy crop of medium-sized long-keeping bulbs are desired, leave the plants 3 inches to 4 inches apart, allowing an extra 2 inches if large ones are wanted. Good Onions for pickling may be obtained by sowing small silver-skinned sorts now, thickly and evenly on poor ground.

Parsley.—Large early raised plants are not the best for the winter crop, or for lifting and storing under glass. Sow seeds now, thinly in shallow moist drills, giving the preference to an open position. Thin out the earliest-raised plants lightly at first, and eventually to a distance of 6 inches or more apart. Plants raised in frames should have formed stout tap roots before they are transplanted to a well prepared border. They will be well ahead of the earliest sown in the open.

Salsafy and Scorzonera.—Roots of the best quality are usually obtained by sowing seed in April on ground that was well manured for a preceding surface rooting crop. If the tap roots come into contact with solid manure they fork badly. Draw drills 12 inches to 15 inches apart, and sow the seed thinly.

New Zealand Spinach.—During the hottest part of the summer the true Spinach is liable to run to seed prematurely, and a substitute in the form of New Zealand Spinach is appreciated in some establishments. A dozen strong plants, given good room on a sunny border, will usually provide enough tops for a single family, and these, or as many as required, should be raised under glass for planting out late in May. Sow the seed now, either two or three in each 3-inch pot, or in a pan or box of sandy soil, placing it in gentle heat.

Vegetable Marrow.—A few early Marrows may be obtained by growing one or more plants in a frame on a mild hotbed, allowing the haulm to spread when protection is no longer needed. Sow a few seeds singly in 3-inch pots and gentle heat, and commence collecting materials for the bed at an early date. Vegetable Marrows may be grown in boxes and trained up the roof of a house, Cucumber fashion, but the flowers must be fertilised.

THE BEE-KEEPER.

REARING YOUNG QUEENS.

ONE of the most important operations in connection with the successful management of bees is the rearing of young queens. In days gone by, when the majority of bees were kept in straw skeps, they were allowed to swarm, and thus a supply of young queens was easily obtained. But with the advent of the movable frame hive and our anxiety to obtain as much honey as possible by working the bees on the non-swarming system, queen rearing was often neglected. There are at the present moment many queenless stocks in the country which, if due precaution had been taken at the proper season, would now have had several frames filled with healthy brood in various stages of development and otherwise in good condition. It is, however, necessary that bee-keepers should have a system in managing their bees, otherwise it will end in failure. It is, however, so simple that it is surprising so important a matter should be left to chance. This is no imagination, as the many inquiries we have on this subject will prove. It is, of course, too early in the season to attempt queen rearing; but if the subject is brought before bee-keepers at this early date they can make arrangements in due course, and there will be less likelihood of neglect when the busy time in the apiary comes on.

COMMENCING OPERATIONS.

It is as well to remember that queens are at their best the second year. The bee-keeper should thus aim at having as many queens of the right age as possible. Another fact that should be borne in mind is the difference that often exists between the various colonies that have had exactly the same treatment throughout the previous season. The queens may all have been hatched at the same time and placed in strong stocks, or given extra bees to bring them up to the desired strength. Still, the following spring some of them will always be in much better condition than others.

Bearing these facts in mind, we always endeavour to have a given number of stocks as strong as possible by the time the honey flow comes. We therefore select those intended for honey production, and strengthen them, if necessary, with bees and brood from the hives intended for queen rearing. By these means colonies of great strength are obtained. Should one of them by chance swarm, which not 1 per cent. will do if due precaution is taken in ventilation and shading, the swarm is then placed in a separate hive, and the old stock used for rearing queens.

A few days afterwards examine the colony from which the swarm came and form nucleus hives from it, as a dozen or more queen cells will probably be found there. Care should be taken that there is a frame of brood in each hive, which ought to be placed between two frames of fully drawn out comb, that are well covered with bees. The advantage of having a frame of brood in each nucleus is that the bees will not desert the hive, which they will sometimes do when the young queen leaves.

We prefer fairly strong colonies for queen rearing, and the best time to commence operations is the middle of a fine day. Examine each frame until the queen is found, place the frame of brood and all the adhering bees with the queen in an empty hive, and close up with a frame of fully drawn out comb on each side. If there are not sufficient bees to cover the brood shake others into the hive from another comb, cover up warm and place the hive a few yards from its original stand, as it is not advisable to destroy the old queens until sufficient young ones are fertilised and laying. Queen cells will be at once commenced, young queens appearing on the sixteenth day. Three or four days previous to this divide the stocks into as many as required. If there are not sufficient queen cells the same operation must be again repeated by taking a frame of newly laid eggs from another hive. Each nucleus hive should then be treated in the same manner as recommended for a stock that swarmed.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Gloriosa superba (E. B.).—The bulbs should be potted without delay. They are best attended to in February, draining the pots well, and using a compost of loam and peat in equal proportions, with a free admixture of sand, and a "dash" of charcoal. Place in a house with a mean temperature of 70°, such as a Cucumber house or stove. Water carefully at starting, but when in full growth afford it liberally, never, however, overwatering, and afford all the light possible, giving the essential support to the stems. The usual atmospheric moisture must be provided. As the growth ripens withhold water gradually, and keep the soil dry during the winter. It is a good plan to lay the pots on their sides in a warm place during winter, as exposure to cold when at rest is a point especially to be avoided. These points—the seasons of growth and complete rest in a warm place—are the most important considerations in its culture.

Burrs on Spanish Chestnut (A. D.).—The burrs or knobs on the portion of stem are caused by a fungus, which we do not find sufficiently developed in your specimen for identification, but it has a close resemblance to that which produces burrs on sapling Ash, and may probably be a form of it—namely, *Dothiora sphaeroides*. The fungus chiefly fastens on the buds, destroys their growing points while in embryo, and lives in a sort of symbiosis in the root until its turn is served, causing it to swell abnormally at the affected part, sometimes for years, but ultimately breaks through the cuticular cells and then produces its "fruits," and the knobs afterwards assume a cankerous appearance. The cause is, of course, the fungus, and it is generally regarded as favoured by the saplings being allowed to grow closely or deprived of light and air, but we have found most specimens where the land is wet or the subsoil is cold and stubborn. Draining, open, of course, for woods and plantations, with a judicious thinning and removal of infested saplings, have been found the best preventives. The saplings are sometimes prized for walking sticks and when cut about the size of your specimen bring fancy prices.

Forced Strawberry Leaves Spotted (Festina Lento).—The leaves are affected by the Strawberry leaf blight fungus, *Sphaerella fragariae*, which is in some cases very disastrous. It first appears on the upper surface, in the shape of small purplish or reddish spots, which rapidly increase in size, and they often run together, thus extending over the whole or greater part of the surface and, of course, destroying the leaf. It usually begins in the summer time on the older leaves of the runners, and winters in them, and in the spring (winter in forced plants) or early summer passes as spores to the young leaves. The fungus appears to be gaining in the country. We have been much troubled with it, and found the practice of cutting off the old leaves, or those affected on the stock plant, and burning them, as soon as the fruit was gathered, very effective in lessening the disease another year. It is also excellent practice, but we have only carried it out on a small scale, after cutting off the old leaves and burning them, to spray with Bordeaux mixture at once, repeating early in September. Then, at starting, the old leaves that could be spared were removed and burnt, and the plants sprayed with Bordeaux mixture at half strength, repeating when the new leaves started, and again just before the flowers opened. This gave us excellent results. Before we pursued this treatment we could not get average crops of Keen's Seedling and many other varieties, they being eaten up by the fungus, as the spots on the leaves greatly impoverished the plants and prevented the fruit swelling properly. The thing is to begin with the early stages of the runners, and keep the parasite from them.

Vines not Setting the Fruit (A. B.).—There does not appear to be anything particularly amiss with the bunch and leaf, they, as you say, being quite healthy, but the "caps" adhere very tightly to the flower, and carry with them the stamens and anthers when removed. This does not indicate vigour, and certainly not a good set. We should have recourse to artificial impregnation, brushing the bunches over carefully, and then follow with another brush charged with pollen taken from free-setting varieties, operating about midday. The bunches also require drawing out—that is, affording a higher temperature. With this, 65° to 70° at night, and 10° to 15° more in the daytime, there should be no difficulty, as the ovaries and ovules are perfect. Perhaps a little more phosphoric acid would be of service, with some magnesia and iron. We should try the effect of a mixture of the following:—Dissolved bones, dry and crumbling, five parts; double sulphate of potash and magnesia, four parts; and sulphate of iron, finely powdered, one part, mixed, using 4 ozs. per square yard, and washing in moderately, the border previously being brought into a proper state of moisture. If the roots are very near the surface supply the dressing at twice, allowing a fortnight or three weeks between.

Woodlice in Vineries (Idem).—Woodlice will certainly eat the roots of Vines, and almost anything tender and good. We do not know of anything better than the two boards trap—two pieces of old board of the same length laid one upon the other where the woodlice haunt, sprinkling on the lower board a little fine bran or pollard, and covering with the other board, so as to allow the woodlice to get between, a small pebble being used when necessary. Examined in the morning the woodlice will be found secreted, and can soon be disposed of by brushing into boiling water. Another good trap is Mangold Wurtzel or Swede cut in two halves transversely, hollowed, notched round the sides so as to allow the woodlice to enter, placing that part where the pests congregate (fig. 75). I seen to every morning the vermin will be found secreted in the hollow, and can be brushed out into hot water.

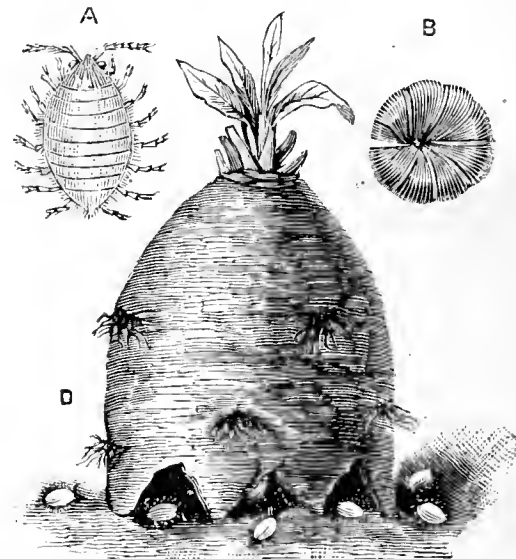


FIG. 75.—TRAPPING WOODLICE.

A, wood-louse (*Oniscus asellus*), full size; B, pill-millipede (*Armadillo vulgaris*), rolled up as a ball; D, upper half of Mangold.

Propagating Jacaranda mimosifolia (Blandford).—This species is increased by cuttings of half-ripened shoots taken during the early summer months and inserted in sand over sandy peat. The cutting pots should be placed in heat, such as that of a propagating frame in a warm house, and kept shaded until well rooted, then gradually inured to the air of the structure. Sometimes the cuttings are inserted singly in small (thumb) pots, which is perhaps the best mode. The cuttings must not be over-watered, nor be more than half-ripened when inserted. The plant thrives in a compost of sandy peat and fibrous loam, with ample drainage. It requires a stove temperature.

Ivy-leaved Pelargonium Leaves Dying (W. W.).—The leaves are attacked by a minute species of animal parasite called the "rusted leaf" pest, *Tarsonymus gerani*. The best thing we have used against it has been nicotine essence, one fluid ounce in five pints of hot rain water, applying when cool enough to the under side of the leaves by means of an atomiser or pneumatic sprayer in the finest possible film, repeating occasionally. We have also found the vaporisation with nicotine essence, or fumigation with tobacco, at short intervals, to be effective. Tobacco water may be used instead of the nicotine essence. One ounce of strong shag tobacco should be placed in a vessel and three pints of boiling water poured on it, covered up closely, and left till cool, then strained and applied with a sprayer or syringe.

Diseased Cucumber (C. W.).—The portion of fruit is badly infested by the scale fungus, *Glæosporium Lindemuthianum*, syn. *Colletotrichum lagenarium*. The effect on the fruit is to spoil its appearance; it is shrunk and out of shape, and the seeds, if any are saved from such fruit, are generally shrivelled, and give rise to the disease anew. The disease is a very old one, and most prevalent during periods of wet and cold weather, the atmosphere of the structures being then also relatively close and moist, if not cold. As regards preventive measures, for remedy is out of the question, we have found the use of a little air-slaked chalk lime, a handful per square yard, and a similar quantity of soot, to have a good effect on the plants. Do not give more water than to keep the foliage from flagging, using a little flowers of sulphur on the hot-water pipes, and maintain a night temperature of 65°, with 70° to 75° by day, rising to 85° or 90° with sun, to encourage the plants growing out of the disease. The atmospheric moisture also requires moderating, and ventilation should be closely attended to, the object being to destroy the spores of the fungus or prevent their germination, as they can only grow in a close and comparatively moist atmosphere. The temperature should be relative to the vigour of the plant—that is, the more vigorous the more heat it requires to elaborate its juices and promote a healthy, disease-resisting growth.

Gypsophilas (Scotland).—There are several hardy herbaceous perennial species—namely, *G. cerastioides*, *G. fastigiata*, *G. glauca*, *G. paniculata* (a very elegant, light and graceful species), *G. perfoliata*, *G. repens*, and *G. Steveni*.

The Okra or Gumbo (N. B.).—We have no experience of this in this country, but in the United States it is started in pots in the northern parts. We do not consider it likely to succeed in Scotland outdoors, or do well in the south of England, even when forwarded in a hotbed, and afterwards planted out in a warm sheltered situation.

Is Ice Plant Edible? (O. F.).—We are not aware that this plant, grown chiefly for garnishing fruit, is edible. According to chemists the watery fluid of the ice consists of chloride of sodium (common salt), potash, magnesia, and sulphuric acid, together with albumen, malic acid, &c. Probably the plant may be used as medicine, but hardly as a vegetable—at least, the taste is saline and somewhat nauseous. The leaves of the species *Mesembryanthemum edule* or Hottentot Fig are, however, eaten. Probably you mean New Zealand Spinach, which we have sometimes heard referred to as Ice Plant, from its creeping and succulent nature. It is edible.

Nægelia (Gesnera) cinnabarina Culture (Dorset).—This appears to be the plant with the "red velvety leaf," an exceedingly ornamental plant, both on account of the flowers, scarlet with a white throat, and because of the beautifully marked leaves. Flowering in winter renders it very desirable. The scaly tubers should be potted in May, or not later than June for flowering at Christmas, in a compost of peat, leaf soil, and a small quantity of loam, pressing moderately. Pots of about 6 inches in diameter are large enough for three tubers, covering with an inch of soil, or a large one in a 5-inch pot. Water carefully, but keep the soil moist until the plants are growing freely, then supply water copiously. Do not syringe the plants, as sediment spoils the foliage. As the foliage dies down let the soil gradually become dry, in which keep the tubers until you start them again.

Growing Cucumbers and Melons in the Same House (W.).—It is rather difficult to grow the two together, but often done satisfactorily, the Cucumbers occupying the northern and the Melons the southern side of the structure. When the Melons are setting their fruit or coming into flower, the syringing on the other side of the house can be moderated, whilst the fertilisation has been effected; indeed, there need be little difference, only take care not to produce a saturated and stagnant atmosphere. Instead of that, a little air should be admitted constantly, so as to prevent the deposition of moisture on the flowers, then by carefully syringing on the other side, or even damping only, a good set may be secured, a little extra warmth being given to allow of the constant ventilation. When the fruits are ripening nothing need be feared, only do not stint the Melons for water during the swelling period, or, on the other hand, give an excess. If you proceed the same at the maturing period as the setting time the Melons ought to finish well. It only requires a little care, and then both can be had from the same structure. Such, at least, is our experience, necessity having prompted the overcoming of difficulties, if such can so be called.

Mushroom Spawn (E. A. T.).—You are not advised to use the spawn from the old bed, either directly in a new one or for the purpose of making spawn bricks. It is not much easier for a person to make these from instructions on paper alone than it would be in the same way to teach how to make a watch. You will find somewhere in "Mushrooms for the Million" something to the effect that it would be as advisable and practicable for any builder to make his own bricks as for every grower of Mushrooms to make his bricks of spawn. The attempt would be ruinous, as not one person in a hundred would succeed in the absence of "object lessons." Spawn that is formed in a bed that has produced a good crop of fine Mushrooms is always weaker than that which was used in producing them, as it degenerates by every generation of transmission, so to say, from crop to crop; that is why professional makers of the familiar bricks will give very high prices for virgin spawn, or that direct from the spores of Mushrooms, for producing very strong "bricks"—not for sale, but for reproducing others of the first quality for that purpose. The greater the number of removes from the spores the weaker the spawn, mycelium, or Mushroom plant is said to become. The most successful growers of Mushrooms in the kingdom, whether on a large or small scale, with few exceptions, purchase (not make) the spawn bricks they use. As the kind you used last appear to have been so satisfactory, the best thing you can do is to purchase more of the same kind, from the same source. We, however, answer your questions. The "cakes" should be dried steadily, three walnut-sized lumps of spawn from strong bricks inserted in each at the right time, and the "cakes" so stacked on edge that when covered with fermenting material the warmth (about 60°) will circulate through on both sides of each, and when they are permeated with fine silvery fibres the covering must be gradually removed and the bricks dried.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably

injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. I.*)—1, *Daphne Mezereum*; 2, *Scilla sibirica*; 3, *Anemone Hepatica*; 4, *Billbergia nutans*; 5, *Begonia sulcata*; 6, *Acalypha Mæfeana*. We are always glad to assist readers, so do not hesitate to write when you require information. (*D. W. L.*)—The flowers sent are both good varieties of *Clivia (Imantophyllum) miniata*. (*F. M.*)—1, *Odontoglossum Andersonianum*; 2, *Cypripedium Exul*, poor form; 3, *Dendrobium Lowianum*. (*O. B.*)—*Angræcum sesquipedale*.

TRADE CATALOGUES RECEIVED.

Abbot Bros., Southall.—*Bee Appliances*.
G. Bunyard & Co., Maidstone.—*Herbaceous Plants*.
Wm. Paul & Son, Waltham Cross.—*New Roses*.
J. Stredwick, St. Leonard's-on-Sea.—*Dahlias*.
C. Turner, Slough.—*General Plants*.
T. S. Ware, Ltd., Tottenham.—*Dahlias, Begonias, Cannas*.

COVENT GARDEN MARKET.—APRIL 19TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	3 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 0 10
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz. bnchs. ...	6 0	8 0
Camellias, per doz. ...	1 0	2 0	Narcissus, doz. bnchs. ...	1 0	2 0
Carnations, 12 blooms ...	1 6	3 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, single yellow, beh. 12 blooms ...	0 6	0 8	Pelargoniums, doz. bnchs.	6 0	10 0
Daffodils, double, bunches	0 4	0 6	Roses (indoor), doz. ...	2 0	3 0
Eucharis, doz. ...	2 0	3 0	„ Red, doz. ...	4 0	6 0
Freesia, doz. bnchs. ...	2 0	3 0	„ Tea, white, doz. ...	2 0	3 0
Gardenias, doz. ...	2 0	3 0	„ Yellow, doz. (Perles)	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Safrano, doz. ...	2 0	2 6
Hyacinths, Roman, bunch	0 4	0 6	Smilax, bunch ...	2 0	3 0
Lilium Harrisii, 12 blooms	4 0	6 0	Tulips, bunch ...	0 4	0 6
„ longiflorum, 12 blooms	6 0	8 0	Violets doz. bunches ...	0 6	1 6
Lilac, bunch ...	3 0	4 0	„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	8 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			



THE MANGOLD WURTZEL.

Now that every human being who has a shilling in his pocket and wants a dinner can, in any large town at least, pick and choose to his fancy's if not to his stomach's content, we may as well inquire whether we always study the tastes of our animals as well as we do our own.

Objection may be made, and no doubt with some reason, that animals as well as men do not always know what is best for them; but the palate is a fairly safe guide, and food that is attractive to the taste, if taken in moderation, will be generally beneficial to the system, human or otherwise. We may therefore accept as a general rule or axiom that the foods which farm animals prefer, if allowed in moderation—i.e., in fixed and regular rations, with proper change and variety—will prove to be the most productive of good health and rapid progress to maturity, and therefore the most lucrative to the farmer.

Yet there are farmers, and plenty of them, who will insist on their flocks and herds eating woody and woolly Swedes and Turnips, woody Swedes of the green-top varieties, because, forsooth, they are less liable to frost when left out unstored through a severe winter; and woolly common Turnips, either half-rotted by frost or half run to seed by mild weather, when, if they so chose, the animals might be enjoying and thriving on good yellow-fleshed Swedes or sweet and luscious Mangolds from the pies.

It is really wonderful to travel round some districts and see scarcely one pie of either Swedes or Mangolds; a large number of farmers never attempt to grow the latter, they would as soon begin to grow Cabbage, which they would consider akin to market gardening, and therefore infinitely beneath them.

When we remember that piod Mangold may be used for any kind of stock from January 1st to September 30th, or for a period of nine months; that Mangold is the best food for the ewes during the lambing season; useful for all kinds of cattle, but invaluable for dairy cows; an excellent addition to the winter food of horses; by far the best food to give with corn to store pigs during summer; and, if not consumed by the beginning of July, greedily eaten by lambs recently weaned, we can only marvel at the obstinacy of those who persistently refuse to grow it.

We have increased our acreage of Mangold, and tried to grow more than we could consume, but have never arrived at the latter point yet. We have after a fine Turnip season had the whole of our Mangold left in hand at Lady Day, but the pigs and the lambs were always equal to the occasion, and we have never yet known any to be wasted.

Seeing, then, that this is such a useful crop, it is surely worthy of a little extra effort and expense to produce. We are wrong in speaking of extra effort, there is none needed if the land has been treated as it should have been in autumn and winter.

All that is required, apart from thorough manuring, is a clean good tilth. The land having been fairly cleaned in autumn, and had its proper ploughing in early winter and early spring, should be ready for a Mangold crop as soon as it is wanted. Of course, if the land be foul and the ploughing has been scamped, there will be the usual plea that it is not suitable for Mangold, and the farmer will have another few weeks wherein to get it ready, or perhaps half ready for Swedes or Turnips. He will get what he considers a satisfactory crop of one or other of these, but one that is not worth half a good crop of Mangold.

All soils, except very bad blowing sand and very thin chalk, will grow Mangold, but those it most delights in are deep loams and peats. Strong soils grow it well, but require more care and foresight in the preparation.

In dry springs it is advisable to soak the seeds for twenty-four hours before drilling, but as there has recently been ample rain, there will hardly be any necessity for doing so this year. From 5 to 7 lbs. of seed are required for an acre, according to the nature of the tilth and the prospects of germination.

Ten to fifteen loads per acre of decayed manure make a sound foundation of food for the plants, though Mangold may be grown on good soil without muck at all. The manure must be well-decayed, not dry and strawy. The latter sort will do more harm than good, and rather than use it you had better use none.

With good muck we should not advise more than 3 or 4 cwt. of superphosphate per acre, but without muck 6 or 7. In any case 1 cwt. per acre of nitrate of soda or sulphate of ammonia should be applied at sowing time with or at the same time as the phosphate.

If no muck be used we should recommend 2 cwt. of sulphate of ammonia at drilling time.

But supposing we have got our Mangold drilled and rolled down to keep in the moisture, as soon as the young plants can be seen in rows they must be side hoed, for they grow rather slowly at first if the nights be frosty, and weeds, being hardier, are apt to partly smother and rob them.

Apart from the clearing and thinning, which require no description, there is little more needed except the top-dressing. Some farmers use 2 cwt. of nitrate of soda after the plants have been thinned, but it has been found that greater advantage is derived from dividing the dressing in two, giving 1 cwt. immediately after striking out, and the other three weeks later. We have used sulphate of ammonia for the same purpose, and put it all on at once—i.e., at the earlier period, and we have never had reason to be dissatisfied with the results.

WORK ON THE HOME FARM.

The heavy rains have done immense good, both to Wheat and early sown Barley, and all that we want now for a week or two is sunshine, and as we write the whole country is bathed in it, so let us hope that it is the forerunner of a fine season.

If old saws are worth anything we are in for a warm dry season, for the wind was persistently in the west on quarter day, and thousands believe in the quarter day forecast, and observe it accordingly. Although no believers in superstition, we are ourselves not without some faith in it.

Wheats are almost too thick, and must be thinned by harrowing. Barleys can be Cambridge rolled where they are big enough, and the Clover seeds, if yet unsown, may be sown on the roller seams. A flat roll taken over the land will then cover all in and save a harrowing, which, however carefully and lightly done, has a tendency to check the Barley, and cause an unevenness of growth and consequent loss of quality.

The severe frost caused quite a rise in the Potato market, and a very pleasant one to those who had any stocks left. The rise in price of 20s. per ton had the effect of increasing the area planted, several farmers who had been wavering as to the quantity they would put in having decided on the larger one. This has had an effect on the seed trade, tubers for planting having risen proportionately with the table Potatoes. It is still seasonable for planting, but April we think quite late enough.

Autumn planted Cabbages should now be making good growth. If, however, they do not progress as they should, 100 to 200 lbs. per acre of nitrate of soda, sown at once, will soon make an alteration. Hares and rabbits are partial to young Cabbage plants; where they are troublesome a good dressing of soot (a ton on 3 acres) sown on a showery day, when the soot will stick to the leaves, will not only keep the little pests off, but snails as well, besides acting as a not to be despised manure for the crop.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899.	April.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches.
Sunday	9	29.945	46.1	41.6	W.	44.8	53.3	33.9	97.9	31.1	0.354
Monday	10	29.597	52.2	50.9	W.	45.9	61.9	44.4	103.8	44.2	0.150
Tuesday	11	29.720	42.9	40.4	N.W.	46.1	50.9	39.7	96.9	35.9	—
Wednesday	12	29.833	41.4	38.1	W.	44.9	54.1	32.1	92.9	29.6	0.028
Thursday	13	29.179	41.9	40.9	S.	45.0	49.1	33.9	72.2	33.7	0.293
Friday	14	28.950	41.4	41.0	N.W.	44.9	49.5	40.3	78.7	39.6	0.166
Saturday	15	29.265	46.4	43.7	N.W.	44.9	53.6	39.1	95.6	36.3	—
		29.408	44.6	42.4		45.2	53.2	38.3	91.1	35.8	0.991.

REMARKS.

- 9th.—Brilliant morning; cloudy from noon; steady rain from 3.30 to 7 P.M., and showery after.
 10th.—Steady rain till 5 A.M., and showery till 10 A.M.; occasional gleams of sun later; heavy rain 4 to 4.30 P.M.; bright night.
 11th.—Overcast and rainy early; sunny from 10 A.M., but occasional flakes of wet snow.
 12th.—Bright sun all morning, a little hazy after noon.
 13th.—Drizzly and rainy from early morning to 11 A.M.; fair day with some sunshine; rain again at night.
 14th.—Incessant rain till 11.15 A.M., fair after; rain at night.
 15th.—Rainy till 4 A.M.; pleasant day, with some sunshine.
 A rainy and variable week, with little bright sunshine. Temperature near the average.—G. J. SYMONS.



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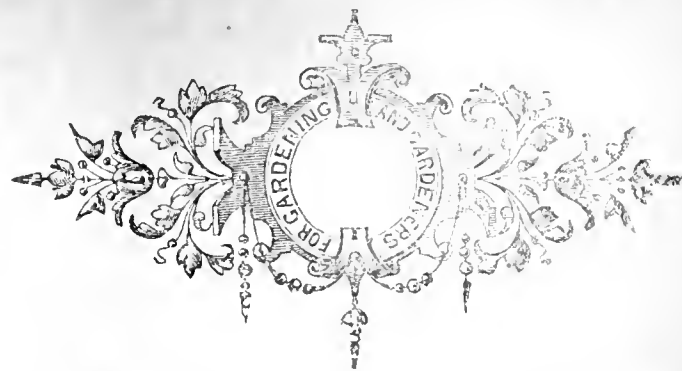
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Journal of Horticulture.

THURSDAY, APRIL 27, 1899.

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THE MAGIC OF SPRING.

THE following lines by Mr. Stopford A. Broke are timely:—

A little sun, a little rain,
A soft wind blowing from the west—
And woods and fields are sweet again,
And warmth within the mountain's breast.
So simple is the earth we tread,
So quick with love and life her frame,
Ten thousand years have dawned and fled,
And still her magic is the same.
"Westminster Gazette."

How certain, amidst all its uncertainties, is spring to come. Its progress may be checked by gusty storms of hail or sleet, by nipping frost or biting eastern gales, but the gentle spirit of spring, borne on the soft west wind, at last prevails, and ushers Flora to her fair domain. What a glorious thing is youth, with all its possibilities! And whether it is the first flush of vegetation in the spring, or the dawning consciousness of power in the young, it is fraught with a fascination found in no other period of life. The pleasures of anticipation are its prerogative; "Hope springs eternal in the human breast." Such pleasures, alas! as are seldom equalled by ultimate attainment, or rarely revealed in the realisation of fondest hopes. Herein is the magic of spring—the magic of life.

Who has not felt that witchery which worded the yearning, "Oh, to be in England now that April's there?" And who, as gardeners, do not view capricious April and "the delicate-footed May" with an anxiety ever oscillating 'twixt hope and fear, till showery June's dark south-west gale has blotted out another spring, and it is numbered with the thousands that have fled? A few inches more or less of rain; a few degrees of rising or falling temperature! The veriest trifles are these in Nature's deep design; yet how much they mean to those who woo her favours, and not rarely receive a rebuff. Certain it is that the beneficent mother is not apt to spoil her gardening sons by over-indulgence. It is the higher training of her servants and ministers, who, once slaves, may, in the fulness of time, become her masters. Let us, therefore, not only "hope" but strive for the mastery.

At this season Nature seems at once our friend and our foe, so often does winter take leave, yet seem reluctant to depart. The old magician smilingly waves her wand over the bare branches, and fruit trees are transformed into bridal wreaths for the marriage of Nature by her winged messengers of love. When she begins with so much pomp and show why is the end so little and so low? This in allusion to an average season, when winter and spring seem, somehow, so hopelessly mixed. Is it something beyond our ken or help? Not wholly so, perhaps. Note an aged Apple tree, or an old Pear tree in all its present picturesque beauty. There are thousands of such trees, beautiful for a time, yet subsequently fruitless, to point the moral of devitalisation. It is much the same in fruit results with the young and vigorous—in habit gross, in nature plethoric—while blossoms on other trees, firm, matured, and constitutionally sound, may come unscathed through the passing frost—a lesson in nature not to be overlooked; but on the contrary, recognised and turned to account as best we may in our methods of cultivation.

"So simple is the earth we tread." But how marvellous in its fecundity! Nature is a merchant who works up every shred and ort and end into new creations. So said that great metaphorical moralist, Emerson. Since that stupendous third day of Creation, whose morning saw the first faint trace of the lowly Lichen's life, and the evening closed upon gigantic plants whose skeletons are enshrined in our coal beds; down through the countless ages to our own little span, has the sublime work been carried on. "Dust to dust," the record of the centuries, still affords material for the great rebuilding—great ruins making way for greater glories, animal or vegetable, either, both, each dependent on the other. Though spring effects, as seen in the mighty regeneration imply subsequent exhaustion, this is only the precursor of continued life and deterioration not apparent on our planet.

"Quick with life and love her frame" undoubtedly is. Changes there must be, here and there, in spots on the surface, but over the great circumference as a whole there is no exhaustion yet, and should it ever occur who knows what great revivifying force may be yielded by the wondrous atmosphere so rich in the elements of food production and earth rejuvenation? Sufficient for the day, however, are the fertilisers to hand, and there is no greater advance shown in the history of our ministrations to the vegetable kingdom than that of concentrated foods for the nutriment of its subjects. The well-fed plant is like the well-fed animal, in being better able to withstand the vicissitudes of our climate. It is an old story, *à propos* of this, of the ducal employer who predicted to his gardener that good time coming when one waistcoat pocket would hold sufficient to fertilise the garden; with the reply that the fellow pocket would then, probably, hold the produce. In its broader sense the time has not arrived, and possibly never will, when, without under-rating these refined aids to fertility, bulk, as represented in the ancient form of restoration, will be regarded as of no account. Where chemical manures have been wholly employed for some years (an instance is under notice), Nature seems a little inclined to resent this homœopathic dosing.

Truly we live in an age of progress. So much has been done, is being done, and will be done; yet how often when some more daring attempts are made to force the hand of Nature is the banner of *Festina lente* displayed from her strongholds. Yes, in the headlong rush of life it may be well to pause at times and "hasten slowly," for sleepy diseases, rusts, blights, and all the bugbears of up-to-date gardening, bear witness to an inherent retributive power it is unwise to ignore. That there is nothing new at present under the sun is a truism; but modern methods have provided new hosts for these parasitic pests with endless trouble in combating them. Other illustrations are not wanting which enforce the wisdom of conforming to natural laws—to prompt a larger and a livelier faith in Nature, with whom—

"Ten thousand years have dawned and fled,
And still her magic is the same."

—AN OLD STUDENT.

ORCHARD FERTILISING IN NOVA SCOTIA.

(BY MR. CECIL H. HOOPER, OF SWANLEY, KENT.)

Farmyard Manure.—This is found very beneficial to old neglected orchards requiring nitrogen, but where trees run too much to wood and leaf with but little fruit, it is found better not to use it. Ten tons of farmyard manure add roughly about 120 lbs. nitrogen, 120 lbs. potash, and 60 lbs. phosphoric acid. It is considered that as a manure for Apples, potash should be given in addition to farmyard manure.

Wood Ashes are applied in Canada to orchard land at the rate of 20 to 40 bushels per acre, being perhaps the best possible manure; hard wood ashes are more valuable than from Fir trees. They contain, when not washed by rain, about 5 to 7 per cent. potash, and 2 per cent. phosphoric acid.

Bonemeal and Muriate or Chloride of Potash.—As the supply of farmyard manure and wood ashes is very limited, commercial fertilisers are largely used. In the Apple orchards of Nova Scotia the two kinds in most common use are finely ground bonemeal at the rate of 5 to 8 cwt. per acre, containing nitrogen 2 to 3½ per cent., and phosphoric acid 22 to 23 per cent., with muriate of potash 1 to 3 cwt. per acre, containing about 50 per cent. potash. These are mixed together, sown broadcast, and ploughed in early in spring.

Nitrate of Soda.—This is sometimes used to renew the vigour of old Apple trees and to young ones that are not making satisfactory growth, using about 1 cwt. per acre. It is also used to a considerable extent for Strawberries in the U.S.A.

A Mixture for Small Fruits.—The "Farmers' Advocate" recommended for small fruit (Strawberries, Raspberries) in Nova Scotia, 100 lbs. of nitrate of soda (= 15 lbs. nitrogen); 200 lbs. of muriate of potash (= 100 lbs. potash); and 550 lbs. bonemeal (= 16 lbs. nitrogen, and = 126 lbs. phosphoric acid).

A Mixture for Orchards.—Professor Frank J. Shutt, M.A., chief chemist Dominion Experimental Farms, in January, 1899, at the Nova Scotia Fruit Growers' Association meeting, recommended as a fertiliser for Apple orchards:—100 lbs. of bonemeal (= 3 lbs. nitrogen, and 22 lbs. phosphoric acid), 100 lbs. of superphosphate (= 15 to 20 lbs. phosphoric acid), and 75 lbs. muriate of potash (= 37 lbs. potash). If kainit (13 per cent. potash) were used instead of muriate of potash (50 per cent. potash), the equivalent would be nearly 300 lbs. of kainit.

Composition of Leaf and Fruit of Apple.—Although the application of fertilisers is not entirely based on the composition of the plant, but is more governed by the nature and capacity of the plant to take up food, and by the constituents of plant food most likely to be needed by the soil; yet it is of interest, and to some extent a guide, to know the composition of a plant. Professor Shutt calculated that the foliage on an acre of Apple trees, assuming forty trees, with 50 lbs. of leaves per tree = 2000 lbs., their composition when mature, but still green, would be approximately—nitrogen, 17.74 lbs.; phosphoric acid, 3.38 lbs.; potash, 7.84 lbs.

In the fruit from trees twenty-five years old, yielding 160 barrels of 140 lbs. = 22,400 lbs. or 10 tons per acre, the chief elements of fertility taken from the soil would be—nitrogen, 8.9 lbs.; phosphoric acid, 5.3 lbs.; potash, 32.8 lbs. The leaves are returned to the soil, but the fruit is exported.

A useful formula recommended for manuring orchards is:—Good rotten yard manure, 10 to 15 tons per acre; kainit (13 per cent. potash), 300 to 700 lbs., or muriate of potash (50 per cent. potash), 100 to 200 lbs.; bonemeal (finely ground), 100 to 200 lbs., or superphosphate, 125 to 250 lbs. It is recognised that rotation in manuring is of advantage.

E. B. Voorhes, of the New Jersey Experiment Station, recommends, in order to provide vegetable matter and to insure a sufficiency of lime as plant food, apply lime at the rate of 25 bushels per acre once in five years. To provide in addition an abundance of all forms of available plant food at the times needed for the development of the tree and fruit, apply annually chemical fertilisers in the following proportions:—Nitrate of soda, 100 lbs.; South Carolina rock superphosphate, 100 lbs.; ground bone, 200 lbs.; muriate of potash, 200 lbs. He adds the amount to be applied depends upon the character of the soil and the kind of fruit, and the age and vigour of the tree; those given mark the minimum. In a number of the best orchards the quantities applied are very much larger than is here indicated, and the larger application is believed by the growers to be proportionately profitable.

Strawberry and Small Fruit Manure.—The Bowker Fertiliser Company, a large and reliable firm of Boston and New York, and from whom the Nova Scotian farmers buy large quantities of fertilisers, make its Strawberry and small fruit manure with the following analysis:—Ammonia, 3 per cent.; available phosphoric acid, 10 per cent.; total phosphoric acid, 12 per cent.; potash, K₂O, from sulphate, 4 per cent. This fertiliser has for twenty-five years produced most satisfactory results, containing a large percentage of potash and

phosphoric acid for the production of fruit, with sufficient ammonia to produce healthy foliage and abundant berries.

Fruit Tree Manure.—The manure of this company has the following analysis:—Ammonia, 3 per cent.; available phosphoric acid, 6 per cent.; total phosphoric acid, 10 per cent.; potash, K_2O , 10 per cent. Apply 1000 to 1500 lbs. per acre, depending upon the condition of the land, previous manuring, cropping, &c.

Green Manuring.—Growing crops to plough in, such as the various Clovers, *Trifolium incarnatum*, Vetches, Peas, and Buckwheat, are much employed for enriching the land. The orchard land is kept frequently harrowed during summer to keep a fine tilth of about 3 inches during the period of active growth. The above "cover" crops are sown soon after midsummer and ploughed in early in spring, so as to retain the moisture accumulated during the winter, and to allow the trees to make an early start. Vegetable matter is thus added, and in the case of leguminous crops nitrogen is added to the soil at the smallest possible cost.

For orchards with Clover the "Farmer's Advocate" recommended 200 lbs. of muriate of potash and 250 lbs. Thomas' phosphate (basic slag), 16 per cent. phosphoric acid.

For further information as to fertilising orchards in the United States, the principles of which are applicable the world over, I would recommend perusing a book by Prof. L. H. Bailey of Cornell University, "The Principles of Fruit Growing," price 5s., published by Macmillan and Co., Ltd., London and New York, who are advertisers in your columns.

SPRAYING FRUIT TREES.

I AM much obliged to your correspondent Mr. C. H. Hooper for his courteous reply to my questions on page 272, April 6th inst., re $\frac{1}{3}$ to 1 lb. caustic potash to 1 gallon of water. I am careful not to use more than 1 lb. of caustic soda and 1 lb. of pearlash to 10 gallons of water. After Mr. Hooper's great experience one need not fear making the solution a little stronger for trees in a very bad state. We may be sure that the young growth of the previous year will not suffer from the application.

In looking over some fruit trees during the last few days I find my old enemy American blight appearing in the rough edges of the wounded and cankered parts of the trees, where the last spraying did not reach them. The trees most affected are King of the Pippins and Hawthornden. I shall try to give these parts another dressing this week with a solution of 1 lb. caustic soda, with 1 lb. of pearlash, to 5 gallons of water. As this pest is just now growing a fine crop of white whiskers, I trust my treatment will stop their further development. Hitherto I have painted the parts so affected with a mixture of softsoap and soot worked to the consistency of cream, and applied with an ordinary paint brush. At some future time I will beg leave to give your readers the results of this caustic solution treatment. —JNO. MILES.



ODONTOGLOSSUM CRISPUM ASHWORTHIANUM.

CONSPICUOUS, even in such a superb display as that at the Drill Hall on Tuesday the 18th inst., was *Odontoglossum crispum Ashworthianum* (fig. 76), which was exhibited by Mr. H. Holbrook, gardener to E. Ashworth, Esq., Harefield Hall, Wilmslow. The Orchid Committee of the Royal Horticultural Society recommended a first-class certificate. Orchid lovers will recognise it as of similar type to *O. c. Baroness Schröder*, which has been illustrated in our pages. In form and colour the flower is exceptionally beautiful, and the delight of visitors who noticed it cannot be a matter for surprise. Almost the whole surface of the upper sepal and petals is dull crimson purple with white fimbriated margins; the lower sepals and splendidly fringed lip are similar in colour, but have more white. It was most unfortunate that the immense number of exhibits compelled the authorities to relegate this and other handsome Orchids to a dark position behind the curtain, where it is probable many visitors would not see them.

NANODES MEDUSÆ.

THIS is a singular Orchid which is sometimes called *Epidendrum Medusæ*, and one that occasionally gives the cultivator much trouble. It makes no pseudo-bulbs, and therefore must have water all the year round, although the quantity should be less in the winter months. The plant does well suspended in a cool house quite close to the glass, and ought to be grown in a basket of clean live sphagnum moss. A plant of the above species when well flowered always commands attention, and the extraordinary flowers, which are of a deep maroon

purple with a greenish disc, with the whole margin cut into segments, forming a deep fringe, has a most singular appearance.

DENDROBIUM ROLFÆ ROSEUM.

A delightful *Dendrobium* named by Rolfe when it first flowered in the collection of the late Major-General Berkley, who was inclined to think it was a variety of *Dendrobium nobile*, which it much resembles, but the dark disc in the lip is entirely absent. The above variety, as its name implies, has sepals and petals of a beautiful bright rose colour, with flowers about as large as a good variety of *D. nobile*. It will succeed well with the last named species, which is supposed to be one

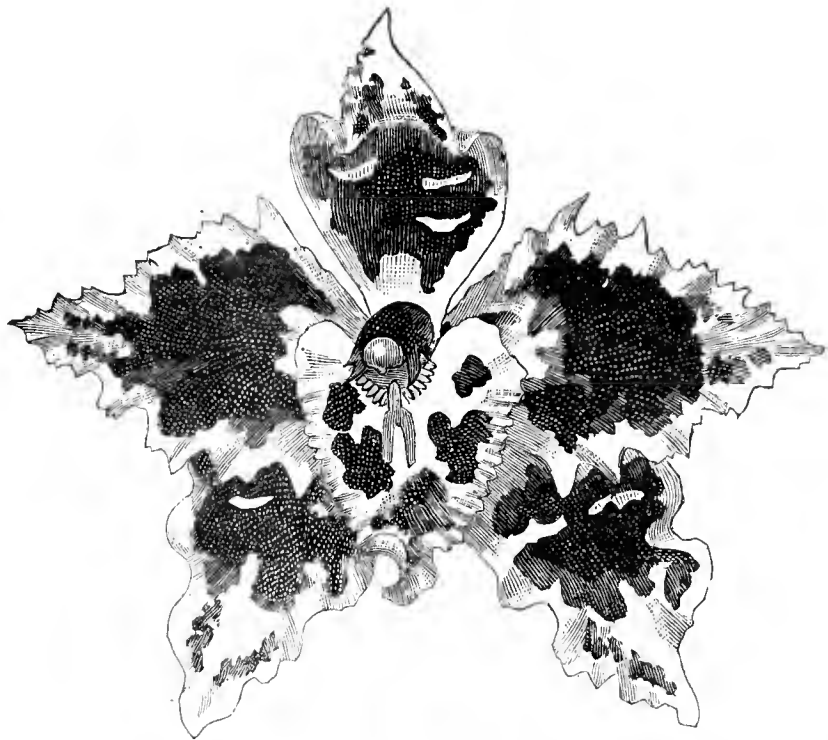


FIG. 76.—ODONTOGLOSSUM CRISPUM ASHWORTHIANUM.

of its parents, and *D. primulinum* the other. Whether it be a hybrid or not it is well worth adding to any collection of *Dendrobiums*.

ODONTOGLOSSUM WILCKEANUM.

This natural hybrid *Odontoglossum* has been proved to be a cross between *O. crispum* and *O. luteo-purpureum*, and often appears in importations of both species, and is perhaps more sought after by connoisseurs than any, on account of its beautiful flowers. There is great variation, as is to be expected from such parents, but all are extremely attractive, and to a lover of yellow flowers will be hard to beat. The spikes often carry from fifteen to twenty flowers, fully $3\frac{1}{2}$ inches across, of a pale yellow colour, with large blotches and often spots of light brown and chocolate on the sepals and petals, the latter much serrated at the edges; the lip, which is a little paler, has two distinct ragged keels. It will succeed under the same conditions as *O. crispum*, and flower in the spring months. Several of the most distinct varieties have had varietal names, and they are well represented in our best collections.

ONCIDIUM CUCULLATUM.

This small growing plant from New Grenada is not often seen in robust health, which is sometimes to be attributed to its being grown in too dry an atmosphere and in too high a temperature. This species and its varieties will succeed under the coolest treatment, and will well repay the cultivator for any pains he may bestow upon them. I find they succeed well suspended quite close to the glass in a house in which *Disa grandiflora* revels, potted in the usual Orchid compost, and during the summer months well supplied with water. The varieties differ considerably in colour, but all are beautiful, and the richly spotted deep violet lip in the best forms is generally very much admired. *Oncidium phalaenopsis* and *O. nubigenum* are supposed by many to be varieties of this species, but whether they are botanically or not, to the cultivator does not matter, as they will all succeed under the same treatment.—J. BARKER, *Hessle*.

LÆLIO-CATTLEYA GOLDEN GEM.

A correspondent has kindly sent me flowers of this pretty little hybrid, and asks for its parentage. The first time I saw it named as above was at the Temple Show, in one of the large trade groups, and alongside it was *Lælio-Cattleya intermedio-flava*, a hybrid between *Cattleya intermedia* and *Lælia flava*. The two are exactly alike in all respects, and, though I have no evidence on the point, I think it is very likely they were raised from the same pod of seed. The "fancy" name is prettier than the more correct appellation, though there are reasons why these should not be given.—H. R. R.

GRAPE GROWING OUTDOORS AND IN COOL HOUSES.

(Concluded from page 324.)

WHAT reason, then, but indifference for the non-production of Grape wine in England? In the year 1897 duty was paid on 15,853,071 gallons of wine imported into this country. Surely some part of this vast quantity could be produced in England. Would it pay? That is just the point the owners of land and the cultivators of the soil want to know. The answer can only come through experiments in different parts of the southern districts of England and Wales. Of quality there appears no question, for the Welsh wines of the nineteenth century, like the Duke of Norfolk's of the eighteenth, are "better than imported." The testimony from the Castle Coch and Swanbridge vineyards seem conclusive on that point, and that of paying or otherwise remains to be determined by experiment in different parts of the country.

The varieties grown for wine making are the Black Cluster, Miller's Burgundy, and Gammé Noir, all with small round (the first named has slightly oval) berries, blue-black when ripe, which usually occurs at the end of September or beginning of October. In the Castle Coch vineyard the Vines are placed 3 feet apart every way, and have stems about 1 foot in height, the growths being secured to upright stakes rising about 4 feet from the ground. The Vines are thus grown on the stool system, like Osiers, the shoots being shortened to a bud or two at the winter pruning, the growths from them thinned, leaving the most promising, and stopping them a few inches from the top of the stakes. I do not know what the produce of such Vines may average annually. Some I had that way gave 3 lbs. per stool, but the variety was Cambridge Botanic Garden. This produce means over 6 tons per acre at 3 feet distance apart, or equal to an average crop of field Potatoes. Will "Upwards and Onwards" kindly say how many gallons of English champagne such produce of Grapes would make?

The Grape Vine may yet again appear on the sunny slopes of southern England and be grown for producing fruit to eat or make into wine against the south walls of buildings in the southern and midland counties, for it thrives on gravelly, sandy, and calcareous soils, producing Grapes rich in flavour, the wine has a full body, and possesses a rich bouquet. It thrives on alluvial soils where water does not lodge in the sub-strata, but the Grapes are sharp in flavour, the wine harsh, but improves by keeping. The soils of the red sandstones, dolites, calcareous and ferruginous gravels, and river-drifts, high and dry, suit the Grape Vine. Most natural soils, especially the stony, grow good Grapes, and often are better than made up borders. If wet, drain them; if low, raise them; if heavy, lighten them by adding rough material, such as brick rubbish or burned clay; and if light, make them more compact by a judicious admixture of marly clay, dried and pounded. Provide in every case just such another staple as for growing any other tree, shrub, or plant, naturally addicted to growing in a generous, well-drained soil, and it will grow far more useful Grapes than the most expensive border ever made.

The Vine requires a high wall with a due south or south-east to south-west aspect. Now is, perhaps, the best time of the whole year to plant the Vine. It will cover a very large area of wall space, such as the whole end or front of a cottage, therefore arrange accordingly, planting the Vine in the most central position. As there will not be time to make any special provision for planting, simply add a liberal dressing of manure to soil such as described, and plant the Vine forthwith, then it will make several feet of growth this summer, and be a great ornament on an otherwise blank wall. A hole about 3 feet wide will mostly accommodate the roots of a one-year-old Vine. Stir the soil well to a depth of 18 inches or a couple of feet, mixing manure with it. If necessary to make a soil for planting in, take five parts of any ordinary soil, say the top ameliorated earth, one part each of lime rubbish, charred refuse, or wood ashes, and horse droppings, and a peck of fresh soot. Mix all together, and the "queen of fruits" will mark appreciation by doing well provided the drainage be sound.

The best varieties for walls are Black July, Black Prince, and Black Hamburgh; White, Chasselas Vibert, Royal Muscadine, and Early Smyrna Frontignan. If only one of each be wanted select the first named of the respective sections.

Greenhouses are common, almost every suburban and rural dwelling has one attached or near by. There is no climber equal to the Grape Vine. It does well with the roots outside, and in a proper soil gives no further trouble, or very little as regards watering. Of course it can be planted inside, but whether there or outside, the soil named answers equally well.

The varieties most suitable for a cool house, or one from which frost only is excluded, or without heat in warm localities, are:—Black: Black Prince, Black Hamburgh, and Madresfield Court. White: Chasselas Vibert, Early Smyrna Frontignan, and Foster's Seedling. The two best are Black Hamburgh and Foster's Seedling. One, or

at most two Vines, suffice for a small greenhouse, hence the reference to the best.

In planting outside, a hole or holes must be made in the wall or boarding of the house where the Vine or Vines are to be planted for taking the cane or canes into the structure. Then proceed to plant one-year Vines. Turn them out, disentangle the roots, and place in position in the soil, moderately firmed, at such height that, when covered with soil, they will be an inch deeper than they were in the pots. Spread the roots out in every direction, with a slight inclination downwards, and cover with soil, none deeper than 6 inches, and some 3 inches. Give just sufficient water to settle the soil about the roots, and then a surface dressing of horse droppings, or other short sweetened manure, to the thickness of a couple of inches. If the Vines have not been pruned, rub off the buds down to where principal growth is required to form the continuation of the stem, which for those planted outside a house must be within it; but for those against walls, start the main growth about a foot from the ground, and in either case, be content with one cane this year. Other matters will require attention from time to time, but they are referred to in "Work for the Week," or if not exactly what is wanted, write to the Editor.—G. ABBEY.

LONDON GARDENS OVER FIFTY YEARS.

No. 7.

BESIDES its near association with three royal palaces, one of which has vanished (that of Whitehall), the park of St. James's is linked to so many historic incidents and notable persons that it must ever stand pre-eminent among the London parks. Nor are there wanting facts which associate it with the horticulture of the past as well as the present. Our first description of the centre portion of the park presents us with a marshy scene, a rivulet running in from the Thames had little rills flowing irregularly right and left; it must have been a favourite resort of wild fowl, rich also in wild flowers.

Along the north side extended the higher ground of St. James's Fields. King Henry VIII. enclosed the greater part of the park, which was larger then, including Pall Mall certainly. He planted trees freely, we may assume, since the poet Milton mentions the shady groves of the park, which must have had time to grow. It was not till after the Restoration that Le Notre, deemed by many the greatest gardener of his century, assisted by Dr. Morison, laid out the ground methodically, constructing the lake and forming avenues. But of his work little remains except the Mall, extending from Buckingham Palace to Spring Garden Gate; probably there is scarcely a tree left of his planting. The general plan of the park, as we now see it, is the result of changes made during the reign of George IV.

But long before his time I believe all the Apple orchards had disappeared from the locality, though even yet there lingers the name of Apple Tree Court, St. James's. Various references occur to these orchards in old authors; very likely other fruit trees flourished along the slope of the hill. There may even have been a vineyard, as not many years since good Grapes were obtained from a wall at St. James's. The parish records have a curious allusion to a "phesic" garden. We cannot be certain where it was, but this may have been on the plot of ground near the tennis court, which Charles I. granted to Parkinson, herbalist and botanist. His principal garden, however, was situate in Long Acre.

Looking at Buckingham Palace we recall the Mulberry Garden of King James, which was on a part of the park now enclosed as a garden to the royal residence. It was one of the fancies of this monarch that silk might be produced here extensively, so he spent upwards of £900 on planting Mulberries, an amount for which he must have got a goodly number. But the silkworm scheme did not answer. Arlington House was built on a part of the ground, though the Mulberry Gardens continued to be a popular resort for some time; probably fruit was raised there. Perhaps descendants of King James's trees may yet be found in Buckingham Palace gardens.

Fifty years seems a good while in the retrospect, but St. James's Park of 1849 was not so very different from what it is now. Some old trees, mostly Elms, have gone, shrubs also that were familiar then replaced by a younger generation; others have advanced from shrubs to trees. Less conspicuous now are the numerous labels, which were presumed to convey botanical instruction to by-passers. They only told the name, Latin more frequently than English, with the natural order and country of the plants to which they were near. I would not say the plan was a bad one, perhaps it might be carried out to advantage now in our open spaces, indicating species and varieties about the beds or borders. In St. James's Park some of these labels were ludicrously shifted, through accident or for mischief, and, in a botanic garden somewhere north, many such used to be carried off from time to time by magpies. Unpromising, ragged shrubs have now been largely superseded by plants of a more ornamental character, and a few additional flower beds have been formed.

The grass of this park formerly had a very forlorn aspect, but

the lawns are no longer left to Nature, being resown whenever necessary, and kept well trimmed. Indeed, in all our important parks the grass is a pleasant feature of the scene, and receives the attention needful to its maintenance in a green and flourishing state. One of the modern improvements is planting, scattered or in groups, Crocuses, Snowdrops, Daffodils, and the like, among the grass on slopes, which make a show during spring. The lake exhibits the result of changes made about thirty years ago, when the bottom was concreted and the depth equalised; the margin also, which not unfrequently displayed mudbanks, has been altered for the better. In 1851, an observer called attention to the "hard line," which marred the beauty of this lake, as seen from various points, and remarked that it needed some diversity. Certainly there were a few uncouth Willows. I remember seeing a man carry one day kicking on the point of his penknife a fat caterpillar of the puss moth which had fallen off its food. However, we have now sundry semi-aquatic plants fringing the borders of the lake here and there, most of which are growing well. Formerly, the islands appropriated to the water-fowl were too crowded with vegetation, but a clearance has been made.

The Green Park, which once was called Upper St. James's Park, seems to have acquired its new name after the alterations carried out by Lord Duncannon about sixty years ago; probably before that date it was somewhat deficient in greenery. Beautiful views of distant Surrey are, however, no longer attainable from the higher ground. The shrubberies, situate along the east side of this park, were formerly regarded with admiration; to us there is nothing very charming about them. Some had venerable Thorns, Hollies, and Lilacs, which are now replaced by other shrubs; and the park itself contains many trees planted during the last twenty years. In the Green Park growth is often retarded by the cold winds of spring, and some young trees have been damaged by maddlesome juveniles. An unsightly reservoir, once prominent on the north side, has been removed; and as a border to Piccadilly we have a long row of beds, which are well filled during the summer with free-flowing plants. The flatness of this park has been remedied by forming dells and little hills.

Constitution Hill when I first knew it was open to the public right up to the wall of Buckingham Palace Gardens, but the footpath has been narrowed, part of the space railed in, and some flower beds made amongst the trees in the portion enclosed. Why was it called "Constitution," or as some say, *Constitutional Hill*? "To take a constitutional" is a phrase we cannot carry back far enough, for the road had this name in 1724, or earlier. Doubtless the stroll towards Hyde Park might be very beneficial, for many an invalid has gained strength by walking or riding, where refreshing breezes come from the northern heights. There was a time, indeed, when Hyde Park was bare and uninviting, but now it is a delightful spot in spring and summer, nor is it very dreary when winter rules the landscape.

Supposing we couple Kensington Gardens with Hyde Park, it will count as the largest of all London parks, or, leaving that out, Hyde Park stands second, being then surpassed by the Regent's Park. One thing we cannot forget about this park, that it was the seat of the Exhibition of 1851, pioneer of numerous later exhibitions throughout the civilised world, some of which have rendered great service to farmers and gardeners. My own recollections of the park do not take me back to the time when the double row of Walnuts extended from the north to the south side, near Park Lane, but I can remember when some of the very old trees remained that shadowed the famous Ring, and I think the deer had not been all removed then. Not far from the Humane Society's receiving house there may be found yet a few venerable trees, relics of the Stuart period; most of the finer park specimens are of last century only. Thousands were planted about sixty years ago in thick clumps, as the newspapers of the day complained. Nature remedied the crowding by killing off many, others were wantonly cut down. The Scotch Fir was freely put in to act as a nurse to others; unfortunately it seemed itself to want nursing in that locality, and did not flourish.

We are chiefly indebted to Mr. Gibson for having devised the alterations which have given the aspect of a garden to portions of Hyde Park. Fifty years ago the end of the Serpentine near Albert Gate was a muddy maledorous ditch, it has been converted into a pretty dell. April and May are the months in which the public throng to see the spring flowers, especially the Hyacinths; they are usually planted in oblong beds, one variety occupying each. Occasionally we have a bed arranged to show three colours, which make a pleasant variety. Tulips are also conspicuous, a large number being grown both of the early and late sorts. The Italian garden on the Bayswater edge of the Park is one of the best examples of this style.

Just a century ago, the records of the Board of Green Cloth inform us, compensation was given to the widow of a man shot by the keepers while they were hunting foxes in Kensington Gardens. At that date the gardens were much of the wood or warren, except on the Kensington side; probably there were rabbits about, and a poultry yard belonging to the Palace. Even in the reign of George III. part was kept as a garden, and people came long distances to see the

principal flower walk, extending 700 yards, which contains now many choice shrubs, and also a collection of bulbous, herbaceous, and bedding plants. Along the banks of the Serpentine are masses of Rhododendrons, with a variety of evergreen and deciduous shrubs, which have a capital effect. Then we have an attraction in the semicircular garden by the Cottage, which was planted in 1874, the design of Mr. N. Cole. During the spring the rows of trees crossing and re-crossing each other in the broad space are delightful to look upon.—J. R. S. C.

STOCKS FOR FRUIT TREES.

THE experience of the writer of the article under this heading on page 314, is so very different from my own that I feel compelled to say a word in reply. It would almost seem unnecessary at the end of the nineteenth century and after the subject has been written about for fifty years, to say anything more about the merits of the Paradise stock for Apples. One learns from experience, however, that teaching is still required, and if the rising generation read an article like this one in question, and see no reply thereto, they might conclude that all that has been previously written upon the merits of the Paradise stock was exploded, and that we had "changed all that" and gone back to working "at least 90 per cent. of the Apples worked in this country upon the wild Crab."

To commence with, I would reverse the figures named and say that probably not more than 10 per cent. of Apples now worked are upon the wild Crab, the balance being on seedling Apple and Paradise. Such a statement as this is naturally only a guess, but I think it will be found much nearer truth than the former one. For many years now we have worked 20,000 Apples a year upon the Paradise, and shall have to largely increase our production. Messrs. Rivers, Bunyard, Veitch, Dicksons, Cheal, and other growers too numerous to mention are growing equally large stocks; and how benighted we all must be if trees grown upon the Paradise are only fit "for fancy gardening."

The fact that we dispose of our trees and that the bulk of them go for market planting is a stronger argument than any other in favour of this stock, and will prove as convincing as a page of writing upon the subject. We have an order on hand for 5000 Apples on Paradise to go to a market grower this autumn, and we have sent them for market work in South Africa (by the way, we shall have to drop the title of "Dark Africa," and apply the "dark" to regions nearer home). If further proof were needed that market men were alive to the merits of Apples worked upon the Paradise I could refer your correspondent to dozens of growers who have planted them largely during the past twenty years, and only a short time ago one of our market friends told me he contemplated digging up 12 acres of Apples planted as bushes on the Free stock and replanting with trees on the Paradise. Why? because he had grown them side by side, and found those on Paradise paid him 50 per cent. more money. That I call practical.

But to pass on, your correspondent says "that it has never been satisfactorily proved that the stock of the Apple, Pear, or Plum exerts any influence whatever on either the quality or flavour of the fruit." This is to me a most amazing statement. I do not know anything of his soil or climate, but I would ask him, just by way of example, if he ever grew Cox's Orange on Crab and Paradise side by side, or Louise Bonne de Jersey on Pear and Quince? In this locality, and many others, one would scarcely know the fruits to be the same, and, speaking generally, when well cultivated the fruit of all kinds when grown on the Paradise is both larger and better coloured, added to which in many dessert varieties the flavour is distinctly superior. Cox's Orange is an example. Most of your readers who are fruit growers will be able to judge for themselves upon this point, but if they require any evidence, let them go to some of our fruit shows, and ask the exhibitors which stocks their exhibition fruit is grown upon. Almost in the same paragraph as the quotation given above one reads a recommendation to double graft Apples upon the Crab stock! But if the stock exerts no influence, what possible benefit can accrue from this operation? Has your correspondent tried it, or is it only "suggestion?" I presume it is the latter, as I know from experience that some of the weaker kinds will not grow when double worked upon strong-growing and prolific varieties. One double works Pears upon Quince, because some kinds refuse to grow upon the Quince direct; but I do not see any advantage to be gained by double working Apples, and, needless to say, the cost of the two would be much enhanced by this double operation and risk.

I do not intend to follow your correspondent through the other stocks he names, but I would point out that several of them are only useful for certain varieties of the fruits recommended to be grown upon them; for instance, not all Cherries will grow upon the Mahaleb, and I should like to ask him what varieties of Peaches and Apricots will succeed upon the Myrobalan? Some Plums will succeed upon it and make vigorous standards; but surely when one finds it much too vigorous for dwarf Plums, it would not be suitable for Peaches.—A. H. PEARSON, *Chilwell, Notts.*

PINCHING FRUIT TREES.

I AM firmly of opinion that pinching or stopping the shoots of fruit trees to form fruit buds is in certain cases a necessary evil. So long as fruit trees are trained in restricted forms, pinching, stopping, or shortening the current year's shoots when these would extend into vigorous long growths, will be necessary. The term "pinching" would appear to imply the early stopping of growths when yet young and soft, probably before the lower leaves have attained to full size. In such cases I would condemn pinching, and should say emphatically that the practice would not produce fruit buds the first season on Apples, Pears, and Plums. For pinching, stopping, and shortening generally to be productive of good results—i.e., the formation of fruit buds, it ought not to be practised on any growth before the principal lower leaves on such have attained full size. These pinched or stopped shoots must have abundance of light and air. The large leaves will then be able to perform their functions, which are of an important character. With the aid of the roots, which must be ramifying in fertile soil near the surface, the food from the earth is supplied to the leaves where it meets the food from the air. The whole is then manufactured or changed into material of a suitable character and transferred to the buds at the base.

It is similar with trees that do not grow in restricted form. If each shoot can have a fair share of light and air, and the roots are abundant and fibrous, extending in good soil near the surface, there will be an equality which will favour short jointed growth, and fruit buds will be largely encouraged.

I quite concur with the last sentence of Mr. Geo. Picker's note (page 317). I look upon pinching as supplementary to the various cultural stages in the management of fruit trees. Good soil, proper positions, young unspoiled trees, the best varieties, correct planting, are all more important than pinching, which depends largely upon those details as to its success or failure.—E. D. S.

FROM an experience extending longer than that quoted on page 317 by Mr. Picker, I quite agree with him that pinching the shoots of fruit trees does not induce the formation of fruit buds. I have tried the plan extensively on all sorts of trees, pinching in June, July, and again in September, and when the trees were winter pruned I failed to see that flower buds had increased in the slightest.

I know this experience is not in accord with the doctrine taught by some writers, but it is a fact, nevertheless, that there is far too much faith placed in the summer pinching of fruit trees to induce fruitfulness. The idea is broadly this—pinching off surplus growths to within a few inches of the base to check the flow of sap, induce the base buds to plump up, and thus form spurs for future fruit bearing. I am afraid this teaching is a long way from being practical.

It is difficult, indeed, to induce fruit buds to form from purely shoot buds. Fruit buds are formed naturally upon trees, according to various circumstances of variety, method of planting, as well as of training the branches. Some varieties of Apples, for instance, will form fruit buds too freely, so as to hinder the extension required for occupying surrounding space, while others will grow several years without the slightest sign of giving a fruit crop. This latter happens in spite of vigorous summer pinching of the shoots. If the pinching is effective, why is it that we see so many varieties of Apples fruitless year after year?

I am a strong advocate of summer pruning, or pinching, call it what you will, but it is not with the idea of inducing fruitfulness by the pinching only. I approve of the plan of cutting away all surplus shoots that are not required for the furnishing of the trees in their various forms of training for another object—viz., the admission of sun, air, and wind amongst the branches to mature them, and thus assist in naturally forming fruit buds.

If it were not for excluding light and air to the innermost parts of the trees, especially bushes, I would allow them to remain until September and then give the trees all the pruning they require. I do not believe in the practice of waiting until December to prune any fruit tree. Far better do it while the leaves are still hanging; it is easier to see what shoots are required, and the work is then more pleasant for the operator.

Even bush fruit trees—Gooseberries and Currants—I like to see summer pruned for the sake of having fruit clean and well coloured. Apples are undoubtedly better coloured where summer pruning is done to admit sunlight to the fruit. Some persons think that the latter has no effect upon the colouring of Apples; this opinion is not shared by—E. MOLYNEUX.

FOR the conditions of such a test as proposed by Mr. Picker to be perfectly fair all the trees must be on the same kind of stock, and as early fruiting is the aim, the Apples should be on the Broad-leaved Paradise, the Pears on the Quince. It will then be found that, generally, pinching done at the proper time, in the right way (there is an improper time and a wrong way) will induce free fruiting earlier than is possible in trees with unshortened growth.

As an exception I may mention a fine pyramidal Newton Wonder Apple some 12 feet high that in the sixth year from planting had only about six Apples, while a half-standard of the same sort planted at the same time near it had a heavy crop of fruit: both are on the Paradise stock.

But it must be clearly understood that pinching does not produce fruit buds on growth of the current year, not even upon such free-fruited Apples as Dutch Mignonne, Potts' Seedling, Stirling Castle, Lord Suffield, and Lane's Prince Albert. It is precisely when the trees have attained a useful size, say in the sixth year, that the advantage appears to be with the standards.

For example, and keeping to Apples, I have among half-standards Duchess of Oldenburg with plenty of fruit buds upon last year's growth, Worcester Pearmain and Newton Wonder with numerous terminal fruit buds, Ecklinville and Keswick Codlin with the young shoots absolutely bristling with fruit buds. Mr. Picker may be congratulated in calling attention to this matter. I hope to deal with pinching more fully shortly.—EDWARD LUCKHURST.

THE question asked by Mr. G. Picker is an interesting one, though it raises a side issue in the sequel—namely, that of extension *versus* restriction.

The philosophy of pinching is obvious. By preventing the tree from developing superfluous growths its strength is clearly husbanded and thrown into those parts that remain, which are thereby rendered stouter and more robust, as well or better capable of forming blossom buds and of bearing fine fruit.

The practice of stopping requires the exercise of that philosophy with judgment. The extent to which pinching may be carried out with advantage depends very much on the subject under treatment, its rate of growth, and many other local circumstances. Some practitioners advise close, others moderate, and others, again, as little pinching as possible consistent with keeping the respective trees within bounds, and preserving an evenly balanced head. This is scarcely to be wondered at when we consider that the matter of stopping has a wide and varied application, and also that different soils and localities have their particular influences on the varieties grown in them, so that the proper system of treatment must necessarily vary somewhat in detail.

The work of pinching, or summer pruning, should be practised with discrimination, conducting it with a view to preserving an equality and symmetry amongst the branches, and also at the same time promote health and fertility. This brings us to the crux of Mr. Picker's question, and I have pleasure in giving the outcome of a lifetime of experience.

Young trees, as I have noticed them, are invariably disposed to produce more branches than can have the space essential for proper development. Now, by thinning out the weak and misplaced growths, additional nourishment is supplied to the others, which may be allowed to develop and remain their full length, or only be shortened so as to preserve an equality of vigour and the desired form of tree. If a young fruit tree be grown on in this way without much cutting until it arrives at a bearing state, it has usually much cleaner and healthier branches, which of course produce the finest fruit.

When a young tree, on the other hand, has to be severely pruned in order to secure the requisite number of growths, and this system of close pruning has to be or is continued, it is hardly likely that the frequent and severe amputations will favour fruit production. If such tree be treated upon more rational principles, the side shoots not required for forming branches pinched to three leaves, and the branches merely topped to preserve the symmetry or even balance of growth, it will assuredly bear fruit earlier and of a much finer quality than were all the growths left. Your correspondent does not mean that sort of pinching, for he takes care to have an "open door" and mixes the orthodox method, intelligently carried out, with the senseless stumping system of manipulation.

By adopting a proper system of summer pinching, much good results to the branches retained, from their basal leaves being more exposed to light, they are the more effectual in the manufacture and storage of nutrient matter, and there will be less need of cutting in the winter. When branches are allowed to grow at will, particularly towards the centre of a tree, they frequently become too sappy, weak, and long for fruit-bearing, and they utilise sap for wood-production, which renders others unproductive. Neglect summer pruning in such case, and cut the worse than useless branches away at the winter pruning. What is the result? A number of shoots start in the spring following from the position where those of the previous year have been taken away.

Summer pruning or pinching mainly applies to trees that produce the fruit on spurs or short side branches, and they are pinched for the express purpose of causing the production or formation of blossom buds. It must not be done before the shoots have reached a certain degree of solidification, else the buds at the base develop growth of a woody nature the same season, instead of either remaining dormant or only

pushing a short, stubby, leafy growth—the true spur terminated by a prominent bud, in that or a future season developing into a blossom bud. In the case of Apples or Pears, to which your correspondent refers, the wood is solidified by the end of June to the middle of July for pinching, and if the leading branches are left unstopped, or merely topped to insure an equality of vigour and form, the side shoots then stopped will mostly form spurs, the sap being utilised for the formation of blossom buds.

Yes, pinching does promote the formation of blossom buds. (1) By concentrating the juices on the parts retained; (2) admitting abundance of light and air for the maturation of the wood and buds; (3) regulating the growth, so as to promote an equality of vigour and the symmetry of the tree.

But Mr. Picker does not mean this system of pruning, but the hard-and-fast mode of pinching to a given number of leaves or joints, and adhering to it under any and all circumstances, and with all varieties and kinds of fruits. I entirely agree with him on this point, for trees are often pruned into and kept in a state of unfruitfulness, whereas by adopting a different course they would become and abide fruitful. Still I hardly concede that his proposed experiment is a fair one. Many owners of gardens cannot adopt the non-restrictive system, but are bound by limit of space to have trees that can be kept healthy and fruitful under the restrictive method. With them it is not so much profit as growing their own fruit, as a relaxation and love of tending their own trees.

Unfortunately the race is now so much for returns in money that the lovers of fruit for its own sake are fewer than in former times. Private gardens, so called, are marketing establishments, instead of sources of supply wholly for home use, and bulk, not quality, has come into vogue, selection has taken the place of collections, and the choicest fruits as judged by the standard of quality have fallen into disrepute.

Still there are some persons who must grow fruit trees as cordons, espaliers, or dwarfs, or not at all, and they must adopt the dwarfing system. They practise root-pruning, and thus maintain a reciprocal action of roots and branches and grow splendid fruit. Many do not, I admit, because they prune the top into sterility and altogether neglect the roots. That is not the late Mr. Thomas Rivers' system, as propounded in the "Miniature Fruit Garden." Will Mr. Picker try this mode? He will get as many trees of the strong growing varieties into the same space as he does with the small growers, to which his plan would necessarily limit owners of small gardens. I do not see the propriety of this, as they are as much entitled to have Blenheim Pippin and Bramley's Seedling as they are to have Potts' Seedling and New Hawthornden Apples. The trees only occupy half the space on the restrictive as on the non-restrictive system, and the results are earlier and better for such proprietors.—G. ABBEY.

My experience is that, with Apples and Pears, the judicious method approved by Mr. Geo. Picker in this section of our fruit trees is conducive to the best results. Not so with others, of which more anon. To pinch, or not to pinch, is not the question, as stated by Mr. Picker, his opinion being "that the six trees merely pinched for training will produce more and better fruit in six years after planting than those for manufacturing fruit buds."

On one point only do I venture to differ from that hypothetical opinion—viz., in respect to quantity. As for quality, the common sense training he advocates is, to my mind, infinitely preferable to the severely restrictive measures as depicted *per contra*. Moreover, that, constitutionally, the freer grown trees will have, do have, distinct advantages over the others. But what is sauce for the goose is not sauce for the gander; and with respect to Peaches and Plums, I am a firm believer in the severer form of pinching. Not with the view of fruit bud production, which with these fruits is generally abundant, but for the all-round benefits conferred to the end of superior wood, and the chief end, of course, superior fruit from vigorous, healthy trees.

The finest Peach trees I ever saw grown outside (or inside, for that matter) were pinched so as to render pruning wholly unnecessary; it was the hobby of a good gardener, and his trees were examples never to be forgotten. Plums on walls I have trained on the same principle with the best results.—K., Dublin.

[We thank our correspondents for the admirable manner in which they have responded to Mr. Picker's invitation on page 317 of our last issue. It is clear that every writer possesses sound knowledge on the management of fruit trees, though it is naturally variously expressed. It must not be supposed that the communications are arranged in the order of merit, or anything of that kind, but simply in the order of their arrival. More will possibly be heard on the subject, and we will only say now that the "severer form of pinching Peach trees" advocated, will be, perhaps, the most startling idea to some extensionists, but we happen to know that "K." had an important charge in one of the finest gardens in Britain, and long famed for the cultivation of Peaches under glass. Without any intention of supporting this particular correspondent, we will state a fact of a not less uncommon

nature—namely, the finest and most fruitful Morello Cherry trees that it has fallen to our lot to see were clustered with spurs from base to extremity of their long, straight branches, the result, at least in great part, of summer pinching and pruning. This, as Mr. Luckhurst says, is an "exception" (to the rule in Morellos), though it seems to show that pinching, when done "at the proper time, in the right way," does not prevent the formation of blossom buds. It must be understood we are not recommending the system of closely pinching either Morello Cherries or Peaches for general adoption.]

SOUTH WALES NOTES.

Chamaerops Fortunei.—This dwarf ornamental Palm is quite hardy in the pleasure grounds here. There are two very fine plants growing in a large shrubbery close to the River Taff, which were planted some sixteen years since from 48-sized flower pots. They have grown well, and are now from 8 feet to 10 feet high, with large compact heads of strong healthy foliage. The stems are from 4 feet to 5 feet in length, and as thick as a man's body, densely covered with a matting of fibre so thick that no frost or cold can injure them. The plants have never had the slightest protection of any kind since they were planted, and we have had some hard winters. Sometimes the thermometer registered as much as 18° of frost, but it did them no harm, further than brown the tips of some of the leaves. The situation where the plants are growing is somewhat sheltered by trees and shrubs, and not more than 28 feet above mean sea level. The soil is a good sandy loam, in which trees and shrubs of most kinds grow well. Conifers in particular, and the best varieties of Hollies and Aucubas.

Choisya ternata is one of the most beautiful evergreen shrubs that is grown. It is perfectly hardy in this district, and makes large bushes in a short time. There are a great many plants of it growing in the shrubberies here, some of them as much as 10 and 12 feet in diameter, and 6 feet high, thoroughly furnished to the ground with flowering branches. It flowers profusely twice a year, and its pure white Orange-like blossoms and dark green ternate leaves produce a fine effect when in flower. It is easily propagated by cuttings, and it makes an excellent pot plant for growing in the greenhouse or conservatory.

Hydrangea hortensis is also hardy in this district. The plant grows rapidly in large bushes, flowers freely, and lasts a long time in beauty. It has a fine effect when planted in large beds by the sides of walks, or in single specimens in front rows of shrubberies. Besides, it makes a very useful decorative plant for the greenhouse or conservatory grown in small pots, with a stem not more than a foot high, carrying at top a pink or blue cyme nearly a foot in diameter, which stands for a long time in good condition. The proper way to grow these is to strike the cuttings singly in 3-inch pots in the month of August, and as soon as the plants have rooted well shift them into 5-inch pots, in which they will flower the following May or June. We grow some hundreds in this way annually, and not more than 1 or 2 per cent. at most fail to flower. After they have finished flowering they are planted out in the pleasure grounds, where they make a fine display in a year or two when in flower.

Aralia Sieboldi is perfectly hardy in this climate, but owing to the great size of its evergreen Ivy-shaped leaves, it requires to be planted in sheltered places, or the leaves will get injured by the storms in winter. We raise a number of plants from seed annually, and grow them in pots for house decoration until they get too big for that purpose, when they are planted out in shrubberies in the pleasure grounds. The plants flower freely outside, and have, when in flower, the appearance of a monster variety of tree Ivy.

Ceanothus Veitchianus.—This dwarf summer flowering shrub has proved quite hardy in this district during the last five years, planted out in the open, and without protection of any kind. The shoots are slightly pendulous in growth, it blooms freely, producing large clusters of bright blue flowers, which are very attractive, and much admired by all. The plant is not particularly fastidious as to soil, and will grow in almost any kind under ordinary treatment. It does well planted in beds on the lawn, or in mixed shrubberies with other flowering plants. *C. azureus* var. *Gloire de Versailles* is also hardy, but not quite so robust in habit of growth as the last named. Although it is hardy enough to stand out in the open unprotected, it grows much better when trained on the south side of a dwelling-house, than it does when grown in bush form in the open ground.

C. dentatus is a most beautiful variety, but it is not hardy enough to withstand a severe winter, not even with the protection of a wall. I had a very large plant of it growing on the south side of my cottage here. It grew well for years, and covered the whole side of the house, and during that time it flowered profusely every year, but a severe winter came and killed it to the ground and it never did any good afterwards. *Forsythia viridissima*, both in bush form and trained on walls, has been very fine here this spring.—A. PETTIGREW, Castle Gardens, Cardiff.



RECENT WEATHER IN LONDON.—A considerable amount of rain has fallen during the past few days. Saturday was dull, as was Sunday, though there were occasional glimpses of the sun. On the evening of the latter day rain commenced to fall, and continued until the early hours of Monday, when it stopped. About midday, however, it recommenced, and only ceased for intervals of varying length up to Wednesday morning, when at the time of going to press it was fine.

— WEATHER IN THE NORTH.—On four mornings of the week ending 24th inst., frosts of from 3° to 8° were recorded. Easterly winds have prevailed, and generally ungenial weather. Saturday, although the morning was decidedly frosty, and the former part of Sunday were more pleasant, but the afternoon of the latter day was again cold with bitter wind from the N.E. Monday morning was very wet but decidedly milder, with the barometer at 45°, although the wind was in the east.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, May 2nd, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. At three o'clock a lecture on "The British and Swiss Alpine Floras" will be given by Mr. E. A. N. Arber, F.R.H.S.

— THE ESLINGTON NEAPOLITAN VIOLET.—Mr. Joseph Oliver having sent us a bunch of Violets, the flowers of which were so fine and pleasing in colour—a charming Cambridge blue, with a few of the petals approaching white—that we wrote to him respecting it. We are informed that it sported from Comte de Brazza's white Neapolitan some years ago at Eslington Park, and is found there to be "the strongest grower of all the doubles, and a larger edition of the old Neapolitan, possessing its colour and sweetness."

— STYLIDIUM CRASSIFOLIUM.—The genus *Stylidium*, though rarely represented in gardens, contains many curious and interesting species. Many of them are more at home in botanical collections, but there are a few species which have a decided horticultural value, the one under notice being of that number. Seeds of this were sent to Kew in May of last year by Sergeant-Major Goodby, and one of the plants raised is now in flower in the temperate house. Like most of the other species, it hails from Australia. It is of herbaceous habit, and forms a dense rosette of deep green, narrow, somewhat fleshy leaves, 6 inches long. From the centre of the plant an upright raceme rises to a height of 1½ foot, on the upper foot of which the flowers are produced, in groups of from two to four, at short intervals. The flowers are rosy-pink, with a darker blotch at the base of each petal. The under side of each petal is covered—as also is the calyx, bracts, and flower stalks—with a quantity of soft glandular hairs. When fully expanded the flowers are about half an inch across, measured the widest way. Like other *Stylidiums*, the column, which contains the stamens and stigma, is very sensitive, the slightest touch causing it to reverse its position.—W. D.

— THE ISLE OF WIGHT.—Daffodils are receiving much greater attention in the Garden Isle than they did a few years back. It is known to many that the wild or common Daffodil luxuriates in the copses of the Island, producing large and good coloured blooms in quantity. We are also favoured in a few places with the old double white trumpet Daffodil (*cernuus plenus*), with its flowers of great beauty. But apart from these, we find the cottagers, amateurs, and professional gardeners alike increasing their stock of varieties of *Narcissi*. The other evening I had occasion to visit St. Lawrence, and having a little time to spare, I called upon a friend (Mr. John Gell), who is a grower of acres of these lovely spring flowers, and the sight I beheld was truly wonderful, and few people in the Island, much less out of it, could conceive of the amount of business done at this time of year in this family of flowers at a remote place like St. Lawrence as is done by Mr. Gell. Several men were busily engaged bunching *Narcissi* in variety for all parts of England. In reply to a query respecting the demand, Mr. Gell said, up to the present, they had not had the least difficulty in disposing of what they could or did grow. The Daffodil exhibitions already held in the Island have been a great incentive to the lovers of a garden to take up the cultivation of these lovely spring flowers for which the Garden Isle is so suitably adapted.—S. H.

— JUDGES OF THE £100 GRAPE CLASS AT SHREWSBURY.—We have had several inquiries from Grape growers for the names of the Judges in the above great class at Shrewsbury, and have pleasure in stating that they will consist of Mr. Owen Thomas, V.M.H., Royal Gardens, Windsor; Mr. Malcolm Dunn, V.M.H., Dalkeith Palace Gardens, and Mr. W. Crump, V.M.H., Madresfield Court Gardens. It will be seen that England, Scotland, and Wales are appropriately represented, and we think the choice admirable. All are gardeners of the first repute in actual practice as growers of Grapes; they are also experienced adjudicators, and know well the points of merit, and otherwise, in the respective varieties. If such men do not inspire confidence it would be hard to find others who would, however capable and honourable these might be. We hope there will be grand competition.

— HORTICULTURAL EXHIBITIONS.—Some few weeks ago you kindly permitted me through the columns of the Journal to make a few suggestions re horticultural exhibitions, so as to give greater attraction to the public at large, and thereby insure their permanency where established, and encourage their formation in towns and country villages where they are unknown. I need not reiterate what I then said, but wish to suggest also the collections of specimens of fruits, seeds, flowers, and plants, to be arranged in show cases, with particulars attached to each specimen, that would be of interest and afford information to the inquiring observer; in fact, we may say, to have a horti-agricultural museum of specimens in connection with each exhibition, arranged in travelling show cases, so that they could be lent to any deserving object, or pass from one exhibition to another.—S. HEATON.

— SHIRLEY GARDENERS' ASSOCIATION.—At the last monthly meeting of above Society, held at the Parish Room, Shirley, Southampton, there was a good attendance of members, and Mr. B. Ladhams, F.R.H.S., presided. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, gave a very interesting and instructive lecture on "The Begonia." The essay embodied directions for the successful cultivation of the plant both from seed and cuttings. Fertilisation was touched upon, and the essayist promised the result would be most interesting and possibly profitable. The lecturer considers that as a bedding plant the Begonia has no equal, especially if first carefully grown to secure dwarf strong plants. Exhibition plants also received a passing notice. At the close of the lecture there was a useful debate, and the meeting closed with a vote of thanks to Mr. Jones. There was a floral display by the members of the Association amongst which was a very fine plant of the new *Cineraria Stella*, shown by Mr. H. Wright, gardener to Mrs. Asten Smith.

— 96,000,000 PRIMROSE BLOOMS.—Few people who observed the ready sale which bunched "Prims," as they are named by the trade, secured on Primrose Day in the streets of London and other centres, possibly gave a thought as to the extensive nature of the business. From twenty reports from different leading cities just to hand, it seems that over 4,000,000 bunches of Primroses were despatched for sale to meet the requirements of Primrose Day. These bunches contained probably something like 96,000,000 blooms. Estimating 4,000,000 plants as being needed to give this yield, they would, set 1 foot apart each way in fields, occupy more than 90 acres of land. Of course the flowers really are gathered in woods, by the hedgerows, and in rural nooks, and the bulk come from the southern counties of England. As far as profit is concerned it is a question if they yield anyone but the flower girls a remunerative balance, for they are often sold in the markets as low as 3d. a dozen bunches. More Primroses came into London last week than for a corresponding period in any previous year. This was due absolutely to the increased demand for supplies for Primrose Day.—("Daily Mail.")

— DEATH OF MR. WILLIAM DICKSON.—It is with deep regret that I have to send you news of the death, at the early age of thirty-five, of Mr. William Dickson, of the firm of Messrs. Dickson & Sadler, chartered accountants, Liverpool, and late Secretary of the Liverpool Horticultural Association. Mr. Dickson had been ailing for many months, and hopes were entertained that he might possibly recover, but these hopes have proved groundless, and he passed away at his residence, 116, Huskisson Street, Liverpool, on the 19th inst., and was interred at St. James's Cemetery on Saturday last. Not only has the city lost a useful citizen, but the Horticultural Association must feel that while Mr. Dickson was able to keep in office they had a painstaking servant, who was thorough in his business transactions, and who did his best. Many friends who knew his personal qualities will unite with me in expressing sincere regret at the loss at so early an age of one who ever tried to do his duty. During the late Mr. Dickson's illness the work of the Association was carried on by his partner, Mr. Harold Sadler, who is now Secretary.—R. P. R.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
April.										
Sunday ..16	N.N.W.	deg. 43.7	deg. 41.1	deg. 47.5	deg. 40.5	ins. 0.09	deg. 46.8	deg. 46.9	deg. 46.8	deg. 31.5
Monday ..17	N.E.	42.4	37.8	52.4	31.0	—	45.6	46.9	46.8	22.9
Tuesday 18	N.W.	44.6	41.8	53.0	31.3	—	45.9	46.9	46.8	24.0
Wed'sday 19	W.S.W.	47.1	41.9	53.9	29.6	—	46.7	47.1	46.9	21.0
Thursday 20	W.S.W.	50.2	45.0	59.1	32.5	0.19	48.1	47.6	46.9	24.3
Friday ..21	S.E.	42.5	41.0	45.8	42.0	0.20	49.9	48.1	46.9	41.2
Saturday 22	N.N.E.	43.5	39.2	55.0	34.0	—	46.9	47.9	47.1	25.0
MEANS ..		44.9	41.8	53.1	34.4	Total 0.48	47.1	47.3	46.9	27.6

The week has been characterised by dull weather and very cold mornings.

— **STRELITZIA REGINÆ.**—Few plants when in flower attract more attention than this old favourite. For brilliance of colour it has few equals, the contrast between the deep orange of one portion and the dark blue of the other being very striking. At Kew two examples are now flowering in the Mexican house, one carrying three spikes and the other six. The spikes are 4 feet in height, and bear about five flowers each. The flowers last in good condition from three to four weeks, and as usually there is a difference of two or three weeks between the opening of the flowers on the first and last spikes, the flowering season is prolonged for eight or ten weeks. Although it has been in cultivation upwards of a century, and was one of the first plants to be figured in the "Botanical Magazine," it is now but seldom seen, and then usually as a pot plant. At Kew it has been planted out in a border of loam in a house which has a minimum winter temperature of 50°, and it is there found to grow more vigorously and flower better than when grown as a pot plant.—W. D.

— **FLOWER TRAFFIC OF THE SCILLY ISLES.**—A competition (says the "Western Weekly") organised by the flower-growers of the Isles of Scilly, in the hope that the Great Western Railway Company would be induced to lower its rate of £8 10s. a ton to Paddington, was started in the spring, and has been keenly watched by the islanders. The flowers have hitherto been conveyed to Penzance by steamer, and thence by rail to London and other great markets. This year some of the Scillonians entered into an arrangement with Mr. Thompson to convey their produce from St. Mary's to the London and South-Western Railway Company's goods terminus on the Devonport side of Stonehouse Pool. This service commenced on March 4th, since which two ketches, the Agnes and the Mount Carmel, have been running two or three times a week. Leaving the Isles at nine o'clock in the evening, they have reached Devonport in time for the early afternoon express train for London next day, and each vessel has carried from 1000 to 2000 boxes of flowers, 160 of which go to the ton. It is claimed that there has been a saving in carriage of between £2 and £3 a ton.

— **ROYAL METEOROLOGICAL SOCIETY.**—The monthly meeting of the Society was held on Wednesday evening the 19th inst. at the Institution of Civil Engineers, Westminster; Mr. F. C. Bayard, L.L.M., President, in the chair. Mr. H. Mellish, F.R.Met.Soc., read a paper on "Soil Temperature," in which he discussed the observations from the thermometers at various depths in the soil which have been made at the stations of the Royal Meteorological Society. The records have been carried on at many of the stations since 1881, and observations have been made at the following depths in the soil:—2 inches, 6 inches, 1 foot, 2 feet, and 4 feet. It appears that in nearly all cases the annual temperature of the soil at a depth of 1 foot is slightly higher than that of the air. In winter time the air and the soil at 1 foot have about the same temperature, the soil being often a little warmer till about the end of January, after which, for the next two months, the air has a small advantage; but in the summer months the soil at 1 foot is generally warmer than the air, the difference exceeding 3° at several stations. Mr. Mellish shows that on the mean for the year the light soils are 1° warmer than the air, while the strong ones are only 0.2° warmer, and he is of opinion that near the surface we may expect to find wider extremes of temperature in light soils than in strong ones, but that the heavier soils are better conductors of heat.

— **AMERICAN APPLE EXPORTS.**—The total Apple shipments to European ports for the week ending April 1st, 1899, were, says a transatlantic contemporary, 13,414 barrels, including 7914 barrels to Liverpool and 5500 barrels to London. The exports included 2052 barrels from Boston, 85 barrels from New York, 2920 barrels from Portland, 6514 barrels from Halifax, and 1743 barrels from St. John, N.B. For the same week last year the Apple shipments were 18,173 barrels. The total shipments thus far this season have been 1,204,491 barrels, against 883,158 barrels for the same time last year. The shipments in detail to date have been 227,749 barrels from Boston, 154,270 barrels from New York, 137,593 barrels from Portland, 406,705 barrels from Montreal, 226,241 barrels from Halifax, and 51,993 barrels from St. John, N.B.

— **DUMFRIESSHIRE AND GALLOWAY HORTICULTURAL SOCIETY.**—An interesting exhibition of Daffodils and other spring flowers was held by this Society in Dumfries on 18th inst. The season in the South of Scotland has been an unfavourable one for early flowers, and comparatively few of the local growers were able to exhibit. Some lovely flowers were, however, sent by others. Messrs R. Smith & Co. of Worcester sent a number of Daffodils representative of the various sections, with a collection of other early flowers. Messrs. Barr & Sons of London showed a fine collection of Narcissi, many of which were new to the greater number of those who visited the exhibition. Messrs. Hogg & Robertson of Dublin sent about forty varieties grown in their bulb nurseries at Rush, near Dublin. These were much admired. Mr. W. B. Harland's, of Cork, flowers were over for the season, but his penderosa, a double Daffodil, was exhibited and viewed with interest. Mr. Service, Maxwelltown, and other local trade growers, had miscellaneous exhibits of much value. Mr. James Davidson of Summerville, Mr. J. Primrose of Arundel House, and other private growers, added much to the exhibition by their Orchids and hardy flowers. Mr. Davidson's Masdevallia Harryana was greatly admired. The exhibition was followed by a lecture on Daffodils by Mr. S. Arnott, Carsethorn. Mr. W. J. Maxwell, late M.P. for Dumfriesshire, occupied the chair. Mr. Arnott's paper treated of the literature, history, and cultivation of the Narcissus. A running commentary upon the varieties was given in connection with the description of the sections into which the flower is botanically divided. Probable improvements in the flowers were also touched upon in a suggestive way. An interesting discussion followed, and Mr. Arnott was heartily thanked for his paper. Votes of thanks were also given to the more prominent exhibitors.

— **EXPERIMENTAL FRUIT GARDENS.**—We take the following announcement from the Report of the Agricultural Sub-Committee of the Herefordshire County Council:—Recognising the dearth of really competent persons to undertake pruning and grafting, it has been decided to establish experimental gardens in various parts of the county, in which to provide instruction in raising, grafting, budding, pruning, and training of all kinds of fruit trees. To commence with, each garden will have an area of an acre, be provided by the landowners, who will use the sites as nurseries for their own estates, and merely place them at the disposal of the Committee for educational purposes. Teachers will visit these gardens at the proper seasons, and as often as necessary, to give demonstrations in the various processes to the public, and special individual instruction to such as are desirous of qualifying for a County Council certificate. This will be given after an examination, which will be partly practical and partly theoretical. The theoretical examination will be by means of written papers, or *vice versa*, according to the capabilities of those presenting themselves. No person will therefore be debarred on account of any lack of previous literary training. Although the only cost to the Committee will be the provision of the instruction and the conduct of the examinations, it is hoped that these gardens will not be altogether valueless to those gentlemen who provide the land; but whatever the result may prove to be, several landowners have entered upon the experiment *con amore*, and there are not wanting signs that plenty of plots will be available as the scheme becomes better known. The sites already accepted are at Hope-under-Dinmore and Bodenham, kindly offered by Mr. Arkwright; Elton and Downton, by Mr. Boughton Knight; Bryngwyn, by Mr. Rankin, M.P.; Putley, by Mr. John Riley; and Thinghill, by Mr. John Smith. [Herefordshire is the greatest orcharding county in Britain, but vast numbers of trees are in a deplorable condition. The teaching projected seems to be very appropriate, and ought in time to be highly beneficial. We are pleased to see that all the proposed examinations are not to be in the form of written papers, as we happen to know of skilful workers who are unable to do anything like justice with the pen to their practical abilities, while others by its skilful use can do a great deal more than justice to themselves as efficient and profitable workers.]

LONDESBOROUGH PARK.

THE writer who essays to give a complete and accurate account of the most interesting and instructive phases of the horticultural and arboricultural life on this magnificent domain will find before him a most difficult task, and one which will take long in fulfilling. He will be compelled to delve 200 years or so into history, and proceed thence step by step to the present day. The records will be of more than passing interest, and the sidelights, as it were, that will be opened up for observation, so rich in variety, that the pages of the *Journal of Horticulture* would not suffice for their accommodation. It may therefore be affirmed at the outset that this home of the Earl and Countess of Lonsborough will not be treated on such broad lines, but be confined to notes of the gardens as they are to-day, or rather as they were when this visit was paid in the summer of last year. It is many months over which to carry the mind, but the features of Lonsborough were such as to leave an indelible impress on the memory. The two gardens separated by the splendid park can be clearly seen, and both will have reference made to them in the succeeding paragraphs.

pulled down in 1819, by William Duke of Devonshire, the representative of the family at that period. The extensive cellars remain intact, and the original flight of steps, leading from the park to the front entrance of the house, may still be seen, flanked by columns supporting graceful urns. The grand stone pillars of the gate leading from the village also remain; but now, on passing through them, instead of the ancient Hall, we come upon the green level of the beautiful lawn, bounded by lovely flower borders, which, with their mass of richly mingled colours, are a delight to behold.

"The lawn and flower beds are surrounded by rows and avenues of stately Yews. One of these avenues is of great length and solemn dignity, and is known as "Garriek's Walk," that great actor having been a friend of the third Earl of Burlington, who for fifty years—from 1703 to 1753—was the owner of this estate. Richard, the third Earl of Burlington, was famous as a lover and patron of literature and art, and was the builder of Burlington House in London. He was also a landscape gardener, planning or altering the grounds at Lonsborough, and in this capacity is immortalised by the great poet, Alexander Pope, who was a friend and visitor of Lord Burlington. It is interesting to think

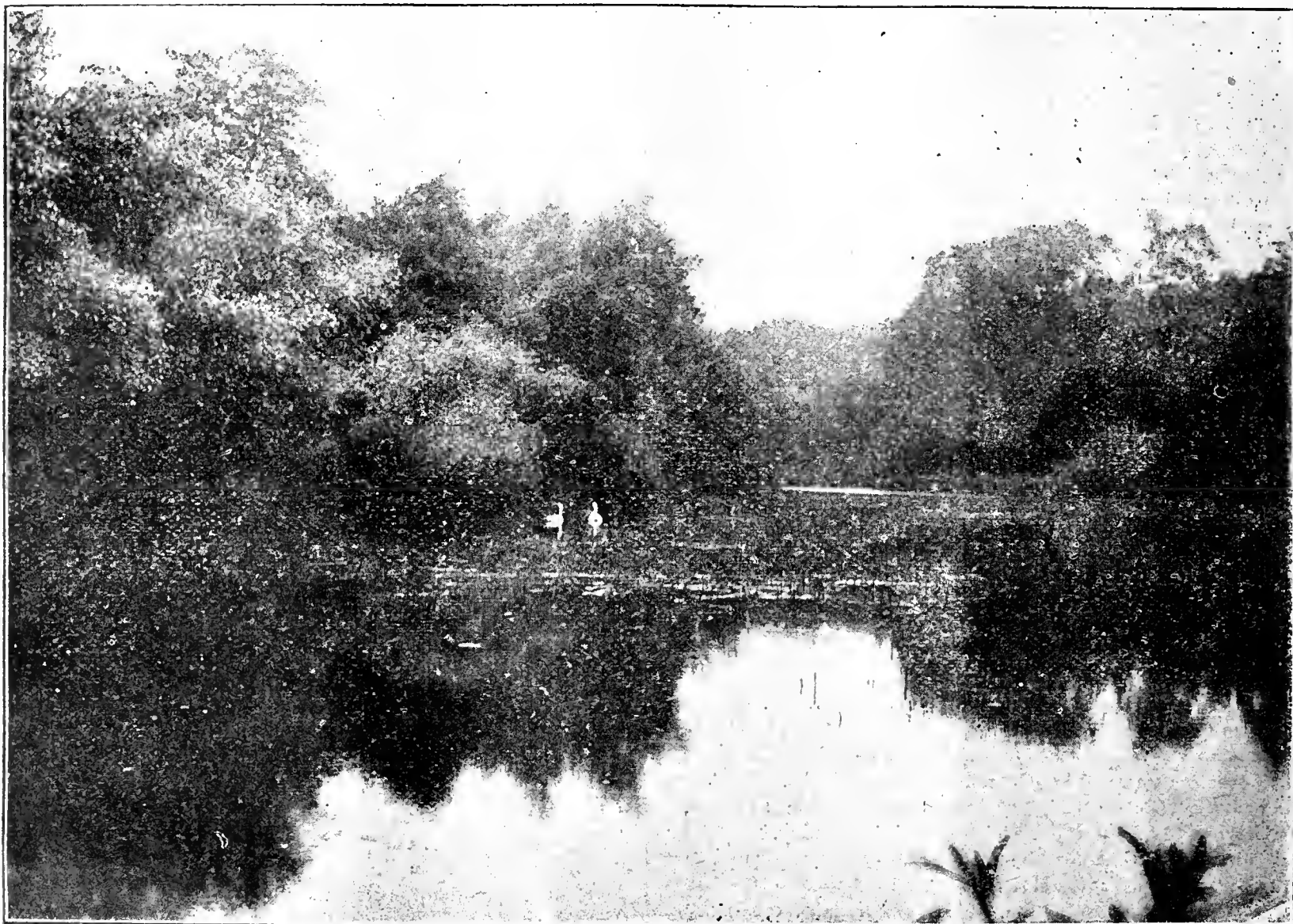


FIG. 77.—A WATER SCENE IN LONDESBOROUGH PARK.

To reach the pleasure grounds from the vegetable and fruit gardens means to traverse more than one or two hundreds of yards—in fact, it is quite a journey, but such a one as always seems all too brief. It is magnificent park land the whole way, with noble trees and charming water scapes scattered about its broad acres. The ground rises and falls in pleasant undulations until the lawns and pleasure gardens are actually reached. The characteristics of these are many and varied, as they may well be, considering the area of ground that is covered. There are great beds and borders of hardy flowers, whence vanloads of flowers might be readily secured; splendid trees of many kinds and sizes; avenues of Elm and Yew; water scenes in which strange and well known waterfowl find a home; wide areas of Water Lilies; shrubs grown for their handsome leafage, and others for the beauty of their flowers; and so one might go on. It is fortunate, however, that we are able to give readers a few words on this portion of the estate from the fluent and graceful pen of Canon Wilton, who, holding the living of the church within the park, is able to speak authoritatively and withal entertainingly of the beauties he so much admires. He writes:—

"The old garden at Lonsborough, generally known as the pleasure grounds, may be said to be unique for historical interest and picturesque beauty. The central space, now forming a fine tennis lawn, was formerly the site of the ancient home of the Cliffords, until the house was ruthlessly

that Pope and Garriek, and many an eminent man of that day, have ascended those grey steps, and wandered in these beautiful grounds.

"From those steps you look down upon a broad avenue of Elms, leading to the large lake in the park—the last of a succession of sheets of water, fed by copious springs and adorned with cascades. Other avenues converge to the steps, from which may be seen the clumps of trees crowning the wolds, known from afar as the "Lonsborough clumps." But it is from the great gates at the farther end of the pleasure grounds, approached by winding walks and shadowy glades, that the principal avenue may be seen—a far stretching vista, through magnificent clumps of Elm, and Beech, and Oak. You look down this long avenue to the distant horizon, where Selby Abbey Church is visible, near Brayton Barff; and again, to the right you see against the sky the towers of York Minster, and to the left the wolds of Lincolnshire, with the broad Humber at their feet. From the fine gate at the head of this stately avenue (only to be rivalled at Windsor or Badminton) there is a gravel drive under lofty Limes to the central space of turf and flowers, before described.

"Mention should be made of the rockery, covered with rare plants, which surrounds the entrance to the cellars. There is also a remarkable

rock garden, adjoining the church, in which the skill of Mr. McPherson, the able and indefatigable head gardener, in arranging the stonework and flowering plants, is conspicuous. This is a new and striking feature of the pleasure grounds. In the centre of it is a fountain, with Water Lilies, under which you catch the gleam of goldfish. The Earl and Countess of Londesborough take the deepest interest in every detail of the old garden, and also of the noble, well timbered, undulating park, in which stands their picturesque house, festooned with creepers, and surrounded with trailing Roses and arches of purple Jasmine. On the slope below the house are beds of flowers, beyond which is a little lake, where the stork and crane and black swan and innumerable rare waterbirds may be seen disporting themselves under the spreading Beeches."

It would be nothing less than a waste of time to pass again over the road the Canon has so charmingly traversed, for it is certain we could not add one iota to its interest. We may, however, before returning to the more utilitarian portion of the estate present two photographic illustrations that have been provided for us by the kindness of Mr. McPherson. It will be seen that one (fig. 77) is a water scene with trees

well worthy of close examination. One of the best crops at the time of this visit was seen in the Tomato houses, in which were hundreds of plants in the best of health and condition. They were carrying immense numbers of fruits, none of which was large, but ranged about medium size, and were smooth in shape. From such fruits there is no waste, but the greatest possible depth of flesh in proportion to the size of the specimen. The variety is one of Mr. McPherson's raising, and he adheres to it because he can find no other that better answers his purpose. The demands upon his resources are great, and it is not likely that too many Tomatoes will be produced. Cucumbers again were in the finest condition, and bore their straight fruits of moderate length in quantity. Such are desired in preference to fewer specimens that are individually of larger size.

In a long and lofty case against one of the walls was a magnificent show of Peaches and Nectarines—not one or two fruits, but hundreds in excellent condition. No one could wish to see trees in better health than those, and it was perfectly obvious that their requirements were thoroughly understood, and their wants promptly supplied. Healthy wood and

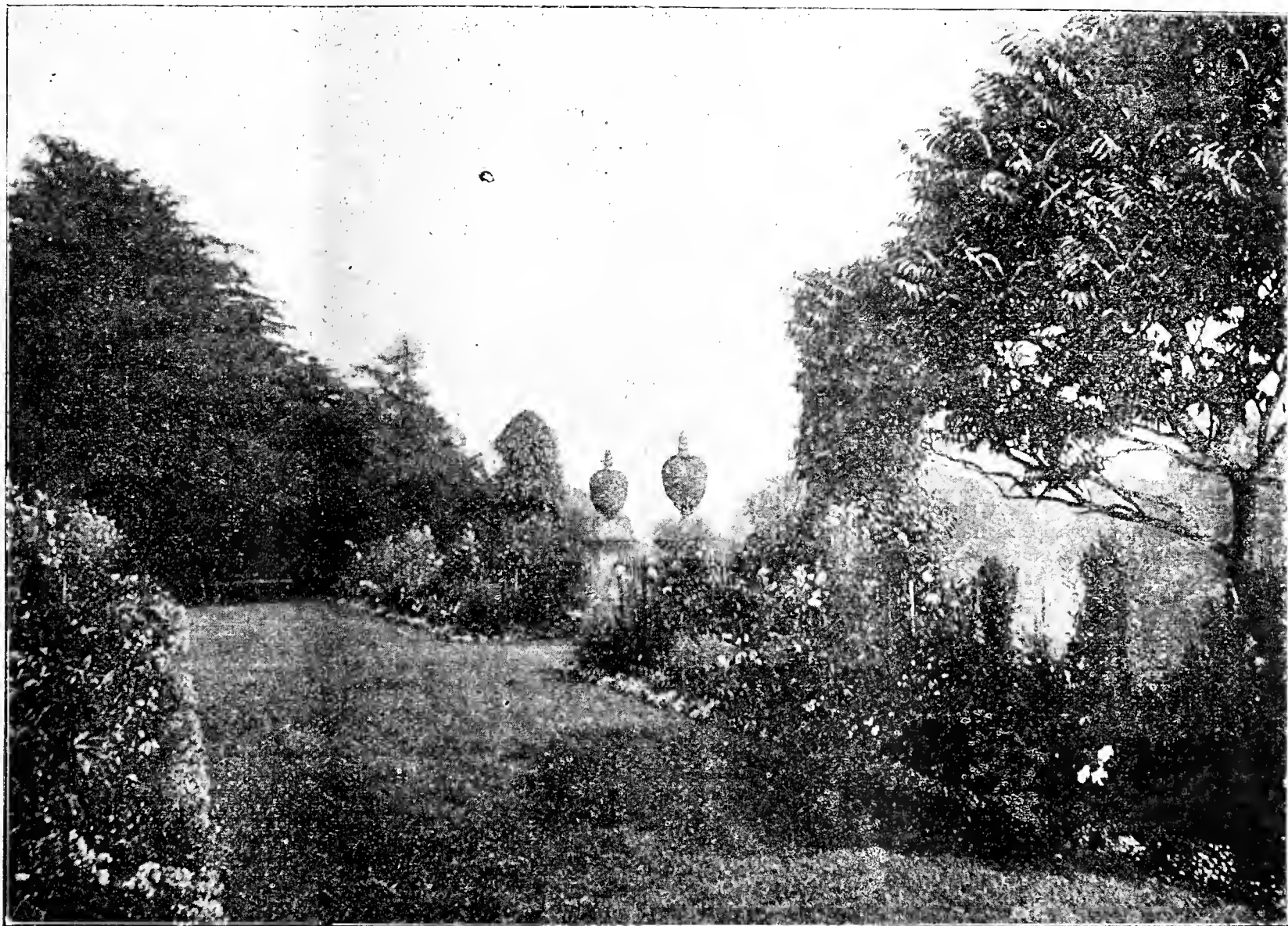


FIG. 78.—IN THE PLEASURE GROUNDS OF LONDESBOROUGH PARK.

and hills in the background; fig 78 shows quite another aspect, and illustrates two of the broad borders of herbaceous perennials to which reference has previously been made.

A portion of the gardens, in which an abundance of splendid produce is grown, is very old, but several of the glass structures have been either renovated or renewed, and the department is admirably managed and equipped. The walled garden in which they are located is quite picturesque, which is more than can be said of many places that are devoted to vegetables and fruits, and which are often severely plain. The stream that passes through between broad grass verges, and the many hardy flowering plants that have to be accommodated, lend an air of attractiveness that might well be extended to other similar places. Even the old walls and buildings add to the effect which would probably be detracted from by modern erections—at any rate, from a picturesque point of view, though they might be increased in value if the standpoint of the severely practical be adhered to. It is better as it is—the practical and useful in association with the ornamental and the beautiful.

Under glass the useful preponderates, as space is too valuable to permit of the purely ornamental occupying it. Everything is grown with a view to being put to some use, and consequently the houses are

leaves, with the beautiful fruit, were living testimony to this. Mr. McPherson's motto may apparently be summed up in one word, and that is "thoroughness." The vineries and their occupants are in the same creditable condition, and though they have been compelled to do good work in the past, they look in every respect capable of maintaining a similar standard in the future with the skilled treatment to which they are subjected; and so it is with everything in the houses, whether they be fruits and vegetables, plants grown for their foliage or their flowers—each has individual attention, and is accorded, as far as possible, exactly the treatment that is most conducive to the best results. In the frames the same conditions prevailed in the varied occupants, which renders repetition unnecessary.

Out of doors a comparatively new fruit garden is rapidly attaining to profitable condition, and will probably be producing splendid crops before many more years have passed away. The trees are numerous, and were, when seen, conspicuous mainly for their excellent form and the cleanliness of the whole of the growth. Naturally some were superior to others, but there was little or nothing to cavil at in the collection as a whole. Those in the older garden, both in the open and on the walls, were equally as creditable, but they had not the glow and vigour of youth as with the new. Pippin and stone fruits, with Currants, Gooseberries,

Raspberries, and Strawberries, were all represented in greater or lesser numbers, according to the requirements of the establishment and their suitability to the position and the climate. No attempt will be made to name varieties, or to compare this with that, as such a course would necessitate each fruit being taken separately, and a special article being devoted to every one. There they were last year, and remain now, and it is more than probable that to the really interested Mr. McPherson would be ready to open up the stores of his knowledge and illustrate his remarks with living examples.

Notwithstanding the unassailable fact that the attention given to the fruits, flowers, and vegetables within doors is of the best, there is no diminution in the careful details when hardy vegetables are concerned. There is a certain amount of ground, and if sufficient crops of all sorts are to be forthcoming at the proper time, every foot of it must be brought into requisition, and be made to produce the best possible results. The consequence is that the land is thoroughly tilled, and as the stores of available food become exhausted they are replenished again and again. It is by such methods of procedure that the practical gardener continues year after year to do such excellent work in a department that is now unfortunately regarded as not demanding any special knowledge or ability. But for the present no more can be said, save to express the pleasure and profit that the visit brought, and to thank Mr. and Mrs. McPherson for their kindly reception.—H. J. WRIGHT.

CULTIVATION OF BEET.

BEET is a crop which does not under ordinary circumstances require sowing earlier than the beginning of May. The seeds ought not to lie long in the ground after sowing, for they are liable to rot should the ground be cold and wet. If sown in May sunny days will heat the soil sufficiently for germination, and by the time the late spring frosts are over the young plants will be above the soil, and advance rapidly in growth.

The details of culture are simple, and it is no difficult matter to grow roots of serviceable size, and at the same time secure them of good shape and colour. With regard to colour, the small roots, if fairly well grown, are the richest. In an open position handsome, profitable, and useful crops of Beet may be grown providing the soil is suitable and properly prepared. In addition to being open the position must be warm, though not where adjoining trees may cause shade, and be drained. Though Beet likes a rich staple it does not succeed in the best manner in recently manured soil. There may be no apparent difference in appearance of foliage, but when the crop from soil which has been manured near the surface is lifted it will be found that the roots are in numerous cases ugly, forked, or coarse. Probably in some soils the roots may be cankered; such produce is neither desirable nor profitable.

To obviate these results the ground for growing Beet ought to be chosen where a previous crop has been grown with a liberal amount of manure. The manuring and preparation of the ground for Celery form an excellent foundation for the Beet crop. The ground should be well broken up two spades deep after the Celery has been used, no manure being added. Failing this sort of ground, thorough preparation ought to be made of another plot, trenching it two spades deep, and placing the manure used at the bottom. Broken up and pulverised soil is friable and mellow for sowing.

Sowing thinly in drills, and not dibbling in the seeds, is the best method, as they can be placed at an even depth. Draw the drills 2 inches deep, and scatter three seeds at distances of 9 inches along each drill, or the seeds may be sown thinly along the whole length, eventually thinning the seedlings to 9 inches. The drills must be a foot apart to allow room for the cultural operations of hoeing and weeding, and afford space for the spread of the leaves. The thinning must be carried out early. If there are blank spaces it is useless to fill them up with thinnings, as these never develop fine roots. It would be better to resow, or leave the spaces unfilled. Hoe the ground as soon as possible to destroy seedling weeds. Those coming up with the plants should be abstracted when thinning. Persist in the hoeing until the growth of the plants will permit of no more being done. In dry weather a light application of salt may be hoed in along the rows, as Beet is a seaside plant naturally.

In well-prepared soil Beet needs no water during the whole course of the summer. Should dry weather occur the tap root will descend further in search of moisture in the subsoil. Where rich light loam does not exist in gardens, but only a stiff unkind clayey material, Beet may be grown by making deep holes with a crowbar, and filling these with good sandy compost, sowing seeds on the surface, and eventually thinning to the best plant.

On shallow soils round Beet may be employed, as there will not be depth enough for the long-rooted varieties. Dell's Crimson is still one of the best varieties of long Beet, and the Globe an excellent round variety.—E. D. S.

AMERICAN BLIGHT.

WHEN I wrote the few notes published in your issue of the 13th inst. (page 298), I hoped that someone would take the matter up, and give their experience upon the subject of blight-proof stocks, and I am amply rewarded by the very interesting notes which you, Mr. Editor, have appended. I do not know that your remarks need any reply from me, for although you differ from me in experience there is nothing new about that, as experiences often differ, and it is only by comparing experiences and results that facts are arrived at, but I think I might just say a word by way of explanation.

Although you carefully guard against the reader gathering that Crab stocks are better than Paradise for growing trees which will resist the attacks of *Aphis lanigera*, yet I fear the casual reader might draw that inference; and whilst I do not say that trees worked upon Paradise are free from attacks, I do most distinctly affirm that under ordinary conditions they are much less liable to them.

The trees you mention were scarcely in a normal condition, being in a hot and dry situation, and as everyone knows, trees that are in anyway rendered unhealthy are the happy homes of insect life. The trees instanced at Chiswick are likewise growing under conditions most favourable to insect attacks, being in an impoverished and excessively dry soil.

But another question arises. We are agreed that the woolly aphid thrives better on some varieties of Apples than upon others, may not the various kinds of Paradise which are used as stocks exert a somewhat different influence upon the Apples worked upon them? I know of five kinds of Paradise which are used as stocks, and some of them vary a good deal in habit and appearance. Very possibly trees worked upon some of the weaker growing varieties may be more liable to attack than those worked upon the more robust ones.

Once more, Mr. Editor, had the Mistletoe anything to do with making the trees blight-proof? Is it possible that it had affected the tree so as to make it distasteful to the next parasite?

Lastly, you say that I do not state with what success I have waged war with the enemy. I thought it would be out of place for me to do so, but you most kindly supplied the deficiency by saying that "the trees received were clean."—A. H. PEARSON, *Chilwell, Notts*

[As affording proof of our readiness to publish records of experience on the subject of "blight-proof stocks" for Apples, we insert a note from an experienced grower of many varieties of Apples in support of Mr. Pearson's proposition that the Duchess of Oldenburg is with him free from attacks of the American blight. This, however, is not a case of stock, but of *scion* deterring the enemy; and for all Mr. Pearson said to the contrary on page 298, it was so in trees of the Duchess under his own observation.

This view of the case we can understand on the ground that the leaves, and not the roots of the tree, having paramount influence in determining the character of the juices peculiar to varieties, and which juices may be more or less objectionable to the trees attacking foes. This Mr. Pearson seems to admit by his suggestion of the Mistletoe affecting a tree, so as to "make it distasteful to the next parasite." As a matter of fact, neither the Mistletoe nor the tree's own roots saved the branches from attack. The woolly aphid is on it now. It was left there last year to see if it would pass to the Mistletoe. So far it has not done so, nor will it to any Apple trees within sight, for not one is to be seen.

Mr. Pearson raises another legitimate question—namely, that some of the weaker forms of the Paradise stock may so enfeeble the growth of the weaker-growing varieties as to render them more liable to attack than if they were making better growth on stronger stocks. There may be something in this, but if there is he cannot very logically stop at the Paradise. We know of trees that have been more or less weakened by bearing which are much more persistently attacked by the pest in question than are others growing by their side, but younger and much stronger, on both Paradise and Crab stocks.

The trees previously referred to that were experimented with till they were burnt were all on the same kind of stock—a rather broad-leaved form of the Paradise. They were, like trees obtained from Chilwell some years ago, clean. Not an insect was seen on them the first year, sheltered as was the position, and we quite believe they did not bring the enemy with them.

How and whence did it come? Perhaps on the wings of the wind from an ancient orchard half a mile away, but much more likely on the wings of those (by some) much loved birds—sparrows. We do not blame the stocks at all, and do not believe they had anything to do with the invasion, but we found out that some varieties of Apples were preferred to others by the enemy. As a matter of fact we became more interested in the progress of the woolly aphid than the trees. Duchess of Oldenburg was the last to be seized upon, but fell a prey at last, and then came the clearance and the fire.

We can understand well grown young Apple trees on a good form of Paradise making shorter, firmer, sounder growth than the varieties

might produce on the deeper rooting Crab, and the insects being tempted by the softer growths, but we cannot understand how and why varieties of Apples on the "Northern Spy stock" (and that was the original question) being invulnerable to the American blight, and we suspect no one in England can tell us; but we could very well understand that the Spy itself would be free on whatever stock it might be established.

As Mr. Pearson truly says, trees at Chiswick are, "growing under conditions most favourable to attack," yet there is one tree in it always clean—the Spy; while its neighbour, of another variety, is always infested with the filthy "blight," or would be if not doctored. Does Mr. Pearson attribute the immunity of the one and the infestation of the other to the stocks on which they are established? We do not, and should be surprised if the Spy is either on its own roots or the Paradise.

We should like to see grafts taken from the filthy tree and inserted in the Spy, also *vice versa*, and then would soon be shown whether the scion or stock had the greater influence in repelling the attacks of *Aphis lanigera*. There will be a new Chiswick some day it is hoped, but the old one will perhaps linger on long enough for testing the matter, and in the meantime we may possibly have light from young New Zealand.]

AMERICAN BLIGHT AND APPLE DUCHESS OF OLDENBURG.

I can endorse what Mr. Pearson says as to the Duchess of Oldenburg's immunity from attack of woolly aphid, for out of seventy trees thirty years old and under, not one has suffered, but they are addicted to both hard and soft canker, which is a thousand times worse. Old or young, in virgin soil or old garden, light or strong, it is the same story—canker. Yet for all this it is one of the most profitable Apples according to the experience of—C. C. ELLISON.

THE APPLE BUD MOTH.

My Apple trees are infested with the little brown caterpillars of the bud moth (*Tmetocera ocellana*), a common pest in America, and in some parts of Europe, but only once before this year brought to the notice of Miss Ormerod. It happens that the specimens then obtained (from which moths were developed and identified) were found in Hornsey by Mr. Oliver E. Janson, in 1889, and my garden is in Hornsey parish. He found the young leaves stunted and shrivelled, instead of fully expanded, and by the end of May all the shoots on infested trees had withered.

The caterpillars have recently hatched, and are now about a quarter of an inch long, brown, with black heads and a black plate on the next segment to the head. They have three pairs of claw feet near the head, four pairs of sucker feet in the middle of the body, and one pair at the tail. They spin the leaf and blossom buds together with silken threads, and feed upon them, leaving them brown and worthless. As described by an American writer, Apple trees after being badly attacked look "as though a fire had swept quickly through them."

Now, I believe that I saw the results of this insect attack in several parts of the country last year in the plantations of fruit growers, who were at a loss to account for the seared appearance of their trees. In my own garden I found the caterpillars, but could not identify them, or get them identified: and I noticed the results as above described.

My object in sending this letter for publication is to induce fruit growers to hunt in curled-up leaves, or shoots bound with silken threads, for this little brown caterpillar, and to communicate the results of their search to your columns.

I believe that injury to Apple trees attributed to frost is sometimes due to this mischievous grub, a capital picture of which, and a description of it and its life history, may be found in Miss Ormerod's "Report on Injurious Insects for 1899," recently published by Simpkin, Marshall & Co., at 1s. 6d.

I identified my specimens from a description given in that capital work, "The Spraying of Plants," by E. G. Lodeman of Cornell University, U.S.A., published by Macmillan, which every fruit grower should possess. Miss Ormerod has provisionally confirmed my identification, though she desires to see some of the moths hereafter to give certainty to the conclusion.—WILLIAM E. BEAR, *Highgate*.

[We shall be glad if our readers who may observe the symptoms described will send us specimens of rolled Apple leaves containing very small caterpillars. The invader, which we have seen, is illustrated and clearly described in Miss Ormerod's report mentioned by Mr. Bear.]

"FAMILIAR WILD FLOWERS."—Part 4 of this admirable work contains coloured plates, with explanatory letterpress, of Tutsan, Corn Sow Thistle, Greater Willow Herb, Hawthorn, Flea-bane, Touch-me-not, Bindweed, Hop Trefoil, Wood Sorrel, and the Yellow Rattle. As we have before stated, Messrs. Cassell & Co. are the publishers, and the price per part is 6d.



KINGSTON CHRYSANTHEMUM SOCIETY.

THE Committee of this old Society, whilst somewhat reducing the number of classes (open) for incurved Chrysanthemums, have, for the purpose of defining what varieties are meant by the term "incurved," now agreed to adopt the N.C.S. classification for the guidance of both exhibitors and judges. Whilst the old cup class for twenty-four Japs and twenty-four incurved, always an unsatisfactory one to judge, because these flowers differ so much in character, has disappeared, the champion class for thirty-six Japanese, with valuable money prizes attached, should prove to be much more popular and attractive. In addition to former Japanese classes, open, the Committee have added others for twelve incurved Japs and twelve reflexed Japs respectively, and they will also have open classes for six white, one variety, six yellow ditto, and six of any other colour. So that good growers have much to invite their hearty co-operation. It is naturally hoped that, being the oldest society in the county, Surrey growers will largely compete.

Although the complete schedules cannot be ready just yet, slips containing all the classes are to be sent out to exhibitors at once. Some grievance having been made last year in connection with the introduction of corks and mirrors into a plant group, it has been determined to exclude everything artificial, as also ribbons or other showy accessories, from the Chrysanthemum baskets, and in connection with the new class for dinner table, for lady amateurs, to exclude Orchids, that all competitors may be placed on the same footing.

BELETED POST-OFFICE PLANTS.

A NICE little problem for the Post-office to answer is propounded by Messrs. Wells & Company, Chrysanthemum growers, of Earlswood, Surrey.

For some years this firm has been endeavouring to build up a connection with Italy and Germany. The firm finds no difficulty in getting plants from the Continent swiftly and safely; but when they send plants to Italy or Germany they are troubled by inexplicable delay and ruined roots. Within two days plants can reach England. From the correspondence and vouchers which Messrs. Wells have sent to the "Daily Mail" it appears that from a week to a fortnight is needed to reach the Continent.

The British Post-office throws the entire blame on the Italian and the German authorities. Would it not be possible for the Government to do something to awaken the Continent?

EXPERIMENTAL HORTICULTURE.

I GREATLY appreciate the reference made on page 301 of the *Journal of Horticulture* of my paper on "Experimental Horticulture," which appears in the current issue of the Royal Horticultural Society's Journal, and am pleased to find that your views are in accordance with those to which I have given expression in my essay.

I find, however, that you are under a misapprehension regarding what I have said with reference to the experiments conducted under the auspices, for nowhere have I suggested that "the results of County Council experiments on allotments should be reported to the R.H.S. for collation." On the contrary, I not only state in the quotation you were good enough to make that experiments should be conducted on land of uniform quality, but show my appreciation of the variability of land devoted to allotments by stating in the next sentence that "it should be obvious that the results obtained from land that differs in its area, as does that of a group of allotments, cannot give trustworthy information."

The misapprehension may have arisen through my having used the term experimental plots instead of experimental stations in my reference to what is being done by County Councils, and I did so because the areas devoted to experimental purposes by these bodies hardly warrant the latter designation. With reference to this branch of the subject, I said, after alluding to the Chiswick garden of the Royal Horticultural Society, the experimental fruit garden at Madresfield Court, and the fruit farm at Apsley Guise:—

In addition to these, experimental plots and gardens have been established by several County Councils, and good work is being done at some of them; but as yet they are too few and isolated to exercise a material influence upon the advancement of horticulture. I am, indeed, persuaded that they will not give an adequate return until they are brought into close touch with each other, and joining hands engage in

experiments which, to be useful, must be conducted over a wide area, and consequently under divergent conditions of soil and climate. To bring the experimental plots belonging to County Councils into union, to formulate the experiments to be conducted on them, and to collate and prepare the results for publication, must of necessity be the work of some central body; and I submit that it is work in which the Royal Horticultural Society might engage with advantage to itself and to the whole horticultural community. The Society would, I believe, be perfectly willing to undertake the work if the County Councils would only consent to be guided thereby.

I have long been impressed with the importance of more exact information than is at present available on the effect of manures upon the various fruit and vegetable crops under the widely divergent conditions of soil and climate that exist in the United Kingdom; also information on the suitability of the several kinds and varieties for the different districts and various soils in them, and this information can only be obtained of the exactitude I have in view by experiments formulated by a central body and conducted under its auspices in the various authorities. We have a good general knowledge of these matters, as proved by the splendid results that are annually obtained in the gardens of all classes. But in the interest of the ever-increasing number of amateurs and the additions that are being annually made to the ranks of professional gardeners, it would be an immense advantage to have the information in a readily accessible form, and thus enable the cultivator to more readily adapt his practice to the conditions which obtain in districts in which he has not had experience than is now possible. This of course is one branch only of the comprehensive subject dealt with in my paper, and the time at my disposal did not permit me entering so fully into details as I could have wished.—GEORGE GORDON, *Kew*.

[After all, our "misapprehension," if such it be, of the observations of our friend in his excellent paper, was not of a very serious nature. He said that "when trials of manure are made care should be taken to select land of uniform quality, for where experiments are conducted on lands that were cropped and manured in several different ways in the previous year the results are, if not entirely misleading, of no practical value." In those observations we apprehend Mr. Gordon stood firm on the bed rock of Science; but we cannot help thinking he stood much less firmly, if on a rock at all, when he suggested that the results of experiments on County Council plots should be collated by the Royal Horticultural Society, because he further said, "The results obtained from land that differs in its area as much as does that of a group of allotments cannot give trustworthy information." What, then, would be the use of placing a mass of untrustworthy materials before the R.H.S. for collation? All that could be done after enormous labour would be to determine the average of the untrustfulness, and we think the Society can do more useful work than that. As a matter of fact, experiments conducted on a large group of allotments are of great, direct, and immediate service to the workers on that particular land, and of very little use elsewhere, where the land is of an entirely different character. Such experiments cost little and do great good to the particular class for whom they are intended, and they do not, in our opinion, come within the scope of the work of the R.H.S., as set forth by Mr. Gordon, in "encouraging the advancement of the higher branches of horticulture."

Experiments may be, as they have been, of great general value when conducted over a series of years on a strictly scientific basis, but is there not just a danger in these days of publicity of the experimental hobby-horse being ridden too hard? We have too much admiration for Mr. Gordon's ability and zeal to knowingly misrepresent him, and we only differ from him in opinion on the one point indicated in his extremely able paper in the R.H.S. Journal.]

"VELTHA" AND TOMATO DISEASE.—We notice that in your correspondence columns on page 308 an inquiry from "C. A." as to the method of treating diseased Tomato plants. We think it right that the public should be made aware of the fact that we prepare a remedy for all kinds of fungoid diseases, and have had most encouraging reports from Tomato growers of the success of this remedy in cases of sleeping, flagging, scab fungus, and kindred troubles of Tomato plants. "Veltha," as our preparation is styled in advertisements in your columns, is administered as a top-dressing to the soil during or after rain, and forms the simplest and cheapest remedy for every form of fungoid disease that has ever been put upon the market.—WILLIAM WOOD & SON, Ltd. [We shall be glad if "C. A." and other growers of plants of any kind liable to infection by fungoid enemies will give "Veltha" a fair trial. It is advertised towards the end of our last week's issue. We shall be taking a decided step in advance if extended experiments show that applications to the roots of plants prevent the spores of fungi which fall on the foliage or fruit germinating there, and taking possession of the tissues; still, if the resting spores can be killed, that would be, paradoxically speaking, yet not the less certainly, going to the root of the matter.]

GARDENERS' PROSPECTS AND "UNIONS."

HAVING been a reader of the *Journal of Horticulture* for a good number of years, I have thoroughly enjoyed the articles written from week to week, and certainly was delighted with the number of a few weeks back, and its portrait gallery. I have always found there was something one could learn from the opinions of others. Therefore, I feel it my duty to advocate the reading of some good gardening paper to all my young friends who are thinking of making gardening their profession.

But when asked by one of these youths, "What prospect is there before me if I follow this work up?" I feel the question a difficult one to answer, because it is certain that all such students cannot obtain good positions as head gardeners, and therefore those who do not must be content with a low wage in comparison with what may be earned by other classes of workmen who have been taught a good trade.

The chairman of an institution where youths are taught various handicrafts said to the writer a few weeks ago, in reference to teaching youths professional gardening, "the game was not worth the candle, as compared to that of teaching such a trade as carpentry. Certainly, a fact that has to be faced is this, What is the outlook for many gardeners who as they get older and have families around them? Nothing perhaps but toil, and toiling all their days, and frequently, when "turning grey," but still strong, having to be superseded by younger men.

How this is to be avoided I fail to see. A friend asks, "Why don't gardeners unite, and cause wages to be better?" But that is easier said than done. Many will, no doubt, have to look forward to the help they can obtain from such societies as the Royal Benevolent Fund, and the old age fund of the Horticultural Benefit Society. Well, these valuable institutions no doubt help their own members, and hence the necessity of every gardener who has no certain provision for the future belonging to one or other of these excellent societies, if not both. Indeed, I should like to see a larger number of gardeners who are in good positions supporting these institutions for helping the less favourably circumstanced but worthy fellow men; while not less should I like to see the time arrive when gardeners will be as much sought after and as well recompensed for their skill and labour as carpenters and other trade workers are to-day.—A. J. B.

[We have to say for our correspondent—1, That he practises what he preaches regarding the valuable institutions mentioned; 2, That as a teacher of gardening to youths the fact is forced upon him that much of his labour may be in vain, inasmuch as not more than a small moiety of the students can rely on future positions equal to those of carpenters; 3, That his common sense, resulting from much thought and long experience, does not enable him to see anything else than the utter futility of men who hope to be gardeners "uniting" to "cause wages to be better."

We are in substantial agreement with our correspondent on all points. The institutions mentioned towards the close of his article have been of enormous value to many gardeners (or their widows), and will be to more who through their safe and sound agency make provision against unfortunate contingencies.

While it is one thing, and a good thing, to teach youths the principles and practice of increasing the soil's productiveness, and obtaining from it the greatest amount of food, in order that the knowledge gained may be serviceable to them in after life, whether they become carpenters or anything else, it is quite another thing, and much less certain to be beneficial, to train a number of lads in the fanciful, as well as other routine of gardening, with the object of making them professional gardeners.

We have frequently said that the natural increase of gardeners, resulting from the employment of youths as may be wanted, will always be more than equal to the demand; and the more that are raised by special means, and these more likely than not inadequate, the greater the number of men called gardeners must eventually be who are unable to find employment—even at a lower average wage rate than that of bricklayers' labourers.

As to gardeners aping mechanics in their "Unions" for increasing wages and reducing hours of work, the idea is fatuous. Remuneration for skilled labour or any other is in the last resort governed by supply and demand, and so long as there are ten men for one vacancy money spent on "Unions," for placing the odd nine in comfortable positions, would be worst than wasted. This "Unionist" idea for the purpose indicated affords a fertile theme for verdant pens, and we have thrown as much rubbish written on the subject into the waste paper basket as would, if printed, fill several numbers of the *Journal of Horticulture*.

Gardeners' mutual improvement associations stand on an altogether higher plane, and the officials of these might, advisably and laudably, endeavour to assist those of their members of high character and capacity into situations which they would creditably fill. If no mistakes in judgment were made in such recommendations, those associations might in time be regarded as trusted sources

of supply of the right men for filling vacancies in the respective districts. We happen to know that last week a well written letter, by the chairman of one of those associations, was not without effect in gaining for a member a favourable hearing as applicant for a coveted position beyond the district in which the association is established. A letter from a "Union" of the other chimerical kind, would, there is little doubt, have been summarily rejected.

Our ardent young men who, with the best intentions, would flounder about in the Press, if Editors would allow them, in the advocacy of "Unions" for "altering things," do not appear to know that the plan has been tried. They seem to be in blissful ignorance of a smart secretary drawing 2d. a week from between 200 and 300 men employed in gardens near London for preaching to them when he could, writing to the Press (but not printed), and to individuals (uselessly), also in other ways fooling his "clients." But though these facts are not known to the present would-be "leaders" in a crusade, they will not perhaps be surprised to hear that the "secretary" was too fully engaged to do any work for two years. All he did during that time was to draw £300 in "tuppences," and as the payers were not a penny the better, the "Union" was "wound up," and the wide-awake secretary is probably living on his wits in some other congenial occupation.]

EPACRIS.

ALTHOUGH these very beautiful hardwooded plants are at the present time, like *Ericas*, under a cloud, I feel sure that they will again become popular and be largely grown. Their culture is by no means difficult, and when well grown they supply beautiful cut blooms during January and February—months when flowers are scarcer than at any other season. When cut with long slender stems few flowers can equal them for giving lightness to cut flower arrangements. Hybridists have succeeded in raising new varieties which, in point of showiness, are far in advance of older ones, and with further efforts in that direction we may confidently anticipate that still better results will be obtained.

Epacris are not only useful for supplying cut flowers, but are of great service for use as pot plants too. I have a vivid recollection of the important part they played in some ball-room decorations I assisted to carry out in my younger days. The plants were irregularly disposed among groups formed in recesses in front of the orchestra and along the sides of a corridor. They were set in a groundwork of Ferns and foliaged plants, Hyacinths, Tulips and Primulas being also interspersed between them, with large Palms waving their arching leaves overhead. Yet among the many beautiful plants used in these arrangements the Epacris were certainly the most conspicuous when seen under artificial light; their long slender shoots gave the necessary touch of lightness, combined with delicate colouring.

Those who contemplate making a start at Epacris growing will do well to purchase a few small plants, for although they are not difficult to raise from cuttings, the process takes a long time; too long, in fact, for these hurrying days, when speedy results are looked for. My advice in the matter is, obtain a few dozens of plants at once, and when these have been grown into shapely little specimens, make a point of inserting a few cuttings each year; the stock is thus gradually increased, and vigorous youngsters are always ready to take the places of any that go wrong, as some assuredly will do, under the best of management.

Young plants in 3-inch pots, if obtained now, will be ready for a shift into 5-inch ones. Good fibrous brown peat, similar to that advocated for *Ericas* on page 303, with sharp sand added, forms the best potting compost. Ample drainage must be given, and firm potting practised, to insure satisfactory results. After potting, place in some structure where a gentle heat is maintained, syringe lightly

during bright weather several times daily, and shade for a few hours. The aim should be to secure long and strong shoots; it is better to have a few of such than numbers of weaker ones. Watering must be carefully performed, but when it is done give enough to moisten the old ball throughout. This cannot always be accomplished in one application. A good waterer will attend to the driest plants first, and then give each a second application as the work of examining the whole stock proceeds.

When the young shoots have grown a few inches in length gradually admit more air, and during June provide all the air possible night and day, except when high winds prevail. Early in July place the plants in a sunny position in the open air, plunging the pots to about two-thirds their depth in ashes. This full exposure will have the effect of thoroughly ripening the wood, a most important point in connection with Epacris culture, for without well ripened wood shoots wreathed with flowers cannot be obtained.

About the middle of September remove the plants to their winter quarters; a greenhouse or other cool structure, from which frost is just excluded, is a suitable position for them, so is an early vinery in which the laterals have been shortened to admit light. If a few plants are wanted in flower during January, by the end of November place some of them in a house where a temperature of from 50° to 60° is maintained, with a suitable amount of moisture. Unlike *Ericas*, Epacris will bear a little gentle forcing. Plants kept in quite cool houses will form a succession. After flowering, the erect growing varieties require hard pruning, cut them back to within one or two eyes of their base, place in gentle heat, and when the young shoots are from 1 to 2 inches in length, shift into larger pots, and treat according to directions previously given for guidance during the growing season. A few pendulous growing varieties never make very strong shoots; in their case little pruning is needed; it only amounts to shortening a few of the longer shoots to preserve the balance of growth.

The following are all excellent varieties: *miniata splendens* (fig. 79), *exoniensis*, *Exquisite*, *Fireball*, *hyacinthiflora*, *h. alba*, *h. candidissima*, *h. carminata*, *Lady Alice Peel*, *Lucifer*, *densiflora elegans* (fig. 80), *grandiflora*, *rubra superba*, and *Viscountess Hill*.—PLANTSMAN.

P.S.—On page 304, a few lines from the end of my article on *Ericas*, I see a slight error has crept in; "*water* constantly at critical times," should read *watch* constantly, &c.

PEACHES.

IN penning the paragraph mentioned by "H. D." on page 294, I had no thought of binding myself to the magical six; I spoke of Barrington and Crimson Galande as if included in a general collection. Furthermore, I explicitly said my remarks were in reference to outside culture only. "Speak as you find" is a golden rule, and so I referred to Barrington as being a free and generous bearer. I have heard of the fault of defective stoning before; the remedy of applying lime need not be peculiar to this variety alone; all Peaches need lime. I have no hesitation in replying to "H. D." anent Crimson Galande. My experience of the variety in question, in totally different soils, on a south-eastern aspect as well as a southern, in more than one locality, leads me to say that I should certainly recommend Crimson Galande for outdoor culture in any district I know in preference to Royal George.—KITCHEN GARDENER.

— STREET TREES AND PATENT PAVEMENTS.—It is to be expected that everyone in planting trees will exercise the usual care to see that drainage conditions are satisfactory; but when the street pavement and side walk are asphalt or other patent material, unusual care is necessary, says "Meehan's Monthly," to have not only good underdrainage, but also good conditions above for the encouragement of moisture. A hole 1 foot in diameter is insufficient if cut directly through the pavement, as both air and water must pass through for the support of the tree. Two feet width is better, and 6 inches more will be acceptable; and if the surface be depressed towards the tree, to attract rain water, so much the better. Add a top mulch of hay or strawy manure, and the conditions will be improved. A layer of well-rotted manure placed just above but not next to the roots will hold moisture, at the same time giving food to the roots. Brick pavements are not as objectionable to trees, as there are many openings to admit the elements needed.

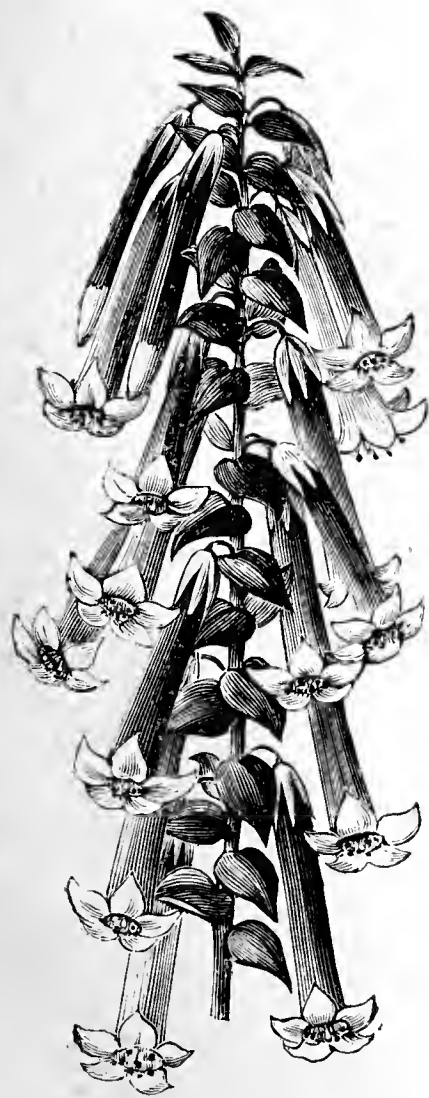


FIG. 79.
EPACRIS MINIATA SPLENDENS.



FIG. 80.
EPACRIS ELEGANS.

SEASONABLE NOTES ON FIGS.

THE earliest forced trees in pots yield excellent fruit during April and early in May. When the very early varieties, such as Early Violet, St. John, and Angélique, are cleared of their first crop the trees should be well syringed, the top-dressing renewed, and copious supplies of liquid manure be given to induce the second crop fruit to swell freely. If the fruit is very abundant it should be thinned, leaving a moderate crop only of the best at the base of the growths. The watering at the roots will still require to be moderate for Brown Turkey, Pingo de Mel, and White Marseilles, now affording ripe fruit; but still afford the supplies necessary to keep the foliage in health, and damp the floors and walls occasionally to prevent too arid an atmosphere.

For the colouring and ripening process a circulation of warm air is necessary, leaving the top ventilators open a little at night. This is essential to the fruit attaining perfection in colour and high quality. When the first crop of fruit is gathered commence syringing the trees twice a day, also watering copiously at the roots with liquid manure. Apply a top-dressing of lumpy material, so as to encourage active feeders, and enable the trees to make a more satisfactory second growth. If the fruits in the second crop show very abundantly they must be thinned, as before advised for the very early varieties, so as not to overburden the trees, to the prejudice of next year's bearing.

Planted-out trees in the house started at the new year will soon give indications of the first crop ripening, and from that time until the crop is perfected a little ventilation should be allowed constantly at the top of the house, and when the weather is favourable a free circulation of warm rather dry air must be afforded. Syringing should cease directly or slightly in advance of the fruit commencing to ripen, and though moderate air moisture is essential to the health of the foliage, a superabundance about the house must be avoided. Let the fruit be perfectly ripe before gathering for home use; if it has to be packed, it should be gathered a few days earlier. A good watering should be given when indications of ripening appear, which more particularly applies to trees with only limited space for the roots.

In succession houses attention will have to be given to stopping the shoots at the fifth or sixth leaf. Avoid overcrowding the growth, as the fruitfulness of Fig trees depends greatly on the exposure of the foliage and wood to plenty of light and air, and too much pinching and a superfluity of spurs is not desirable, as the finest fruit is borne on extensions. The successional growths also should be kept rather thin, allowing those only to remain that will be required to supplant the branches annually. Cut out and maintain a proper successional supply of bearing parts. It is no use, however, striving to render gross trees fruitful by stopping and thinning, for nothing will do that but judicious root-pruning and limiting the rooting area, rendering it firm, so that the trees live thriftily. Attend to syringing the trees twice daily, and water abundantly at the roots as often as required; employ weak tepid liquid manure, especially where the borders are small, and add to the mulching so as to keep about an inch thickness of lumpy material on the border into which the roots will spread, and this can then be fed to any extent.—GROWER.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. H. Self Leonard, Rev. W. Wilks, Mr. Elwes, and Rev. G. Henslow, Hon. Sec.

Alpine Auriculas, mildewed.—A plant was received from Rev. C. Wolley-Dod infected by a fungus. It was forwarded to Dr. W. G. Smith for examination.

Apple wood, discoloured.—Some specimens received from Mr. Basham, were also sent to Dr. Smith.

Germination of Daphne Mezereum.—Mr. Elwes described some curious differences between the germination of some seeds of this shrub, in that the plumule grew up normally above ground, while in others, from some unaccountable cause, it appeared to be arrested for a long period before appearing, although they sent down roots underground in the usual way.

Hyacinth stem and leaves growing downwards.—Mr. Henslow showed a plant, the bulb of which had been accidentally inserted upside down. The roots had grown normally downwards; but the shoot, instead of turning upwards towards the light, had also grown vertically downwards. It subsequently elevated the bulb into the air, removing all the roots from the soil, and continued to grow solely at the expense of the nourishment contained in the bulb. The flower stalk closely invested by the leaves, was 7 inches in length.

Carnations attacked by Acarus.—Mr. Michael reported upon the specimens sent to the last meeting as follows:—"The Carnation pest is a Tarsonymus. All this genus are destructive and difficult to eradicate in consequence of their leaf and stalk-mining habits."

Diseased Carnations.—Dr. W. G. Smith, Leeds, reports as follows:—"On the Carnations sent none of the fungi usually present were found—e.g., rust, leaf spot, fairy ring spot. The symptoms presented are those of the disease known as 'bacteriosis.' This is the name given by Arthur and Bolley (Purdue Uni. Agric. Exp. Station, Bulletin 59, 1896), because they ascribed the disease to the action of a Bacterium (B. dianthi). They were able to infect healthy plants with cultures from diseased. A Belgian investigator, Paul Nypels, published in 1898 ('Notes Pathologiques') some observations on the disease, which point to some other agent than bacteria as the primary cause. Other workers

also hold this view. The disease is well known, and very destructive in indoor cultivation of Carnations in United States and in Belgium. The conditions favourable to it are overcrowding, defective ventilation, and the effect of moisture on the foliage, due to overhead watering. Prevention is evident, except for the last item mentioned; but overhead watering must be reduced as much as possible. The structure of the Carnation leaf indicates a plant suited to a dry open situation, like our native Dianthus, on rocks, old walls, and open pastures. In indoor cultivation means must be adopted to prevent too frequent watering of the foliage. This has been done by some growers in America, as described by Arthur and Bolley. Pieces of wire netting bent into a A shape are placed between the rows of plants, so as to keep the lower leaves clear of the stages. The watering is done by a hose directed into the A, and the water is distributed to the roots by a nozzle, delivering on both sides. Arthur and Bolley give illustrations in paper sent hitherto. The method has been successful against this and other diseases of indoor Carnations. Where this disease has already shown itself, it may be checked by spraying the foliage with Bordeaux mixture."

Vines malformed.—Mr. G. Wythes of Syon House sent branches of Vines with malformed flowering branches, supposed to be due to fog; but they presented a not uncommon condition of being tendrils bearing abortive buds. As Darwin pointed out, Vine tendrils are homologous with flowering shoots, and such transitional states between pure tendrils and bud-bearing ones occur on all Vines, and have nothing to do with external climatic conditions.

Effect of Lightning on an Oak.—A specimen received from Dr. Plowright of Lynn showed how oak wood is sometimes torn into longitudinal fibres by electricity. "The trunk from which this specimen was taken was that of a tree grown in East Anglia, and purchased for timber by a timber merchant in King's Lynn, from whose woodyard it was obtained. The amount of injury was comparatively slight, consisting only of a groove cut from top to bottom of the trunk, about 2 inches wide, and extending only a very short distance into the woody tissues, but tearing them up longitudinally into strips several feet in length."

Witches' Broom on a Scotch Fir.—This was received from Dr. Plowright, who writes:—"The specimen is sent by Hamon L'Estrange, Esq., and was found growing upon one of the Fir trees in his park at Hunstanton Hall, Norfolk. It consists of a mass of hypertrophied 'dormant buds,' measuring a meter in circumference round its widest part, and weighs 2½ kilogrammes. It is borne upon a branch which shows eight annular rings and springs from a lateral shoot. It is interesting to observe that this shoot is itself hypertrophied, as compared with the corresponding one on the opposite side of the branch, but that this hypertrophy only extends as far as the 'growth, beyond which it is atrophied and dead. The growth itself consists of seven or eight rounded masses, composed of aborted shoots—partial developed buds closely aggregated. The masses are of varying ages, some bearing green leaves, while others are quite dry and dead." The origin is supposed to be due to the attack of a phytophaga.

Malformed bulbous plants.—A quantity of decayed and arrested bulbous plants were received, both from St. John's Wood Cemetery of Marylebone and from Lincoln's Inn Fields. Both cases illustrated the effect of premature growth from the very mild winter, followed by severe check during the week of frost, and subsequently by excessive wet. Mr. Henslow observed that on the high ground and clay soil of Holland Park bulbs have come up exceedingly well, having been planted in September.

Apple trees affected by grubs.—Specimens received from the Chiswick Gardens were referred to Mr. McLachlan, who has reported as follows:—"The larvæ in the Apple twigs is no doubt that of Laverna vinolentella, which was formerly considered a variety of L. atra (the larva of which feeds on the fruit of Hawthorn) but is now regarded as distinct. I am not aware that it has ever been found sufficiently common to occasion serious damage, but as the egg is, no doubt, laid in or on a bud, and the depredation primarily confined to the bud, it is evident that the question of serious damage is only one of degree."

Odontoglossum Alexandræ.—Dr. Masters exhibited a spray on which every flower had three stamens instead of one only. It was received from Mr. Cookson.

Jatropha podagrica.—This scarlet-flowered species was awarded a botanical certificate. It is a well-known plant in botanical gardens.

A VICAR'S FRUIT PROTECTOR.

VARIOUS devices have been resorted to for preserving ripening and ripe fruits from injury by birds, wasps, flies, earwigs, and all such enemies that are so frequently troublesome and often ruinous; but we have not seen one so neat, and at the same time so substantial, as a sample that has been sent to us from Ashburton by the Rev. E. Darnley Smith.

This gentleman appears to have been engaged for a considerable time in developing an idea, which he reasonably hopes will bear fruit for himself—i.e., prove a success as a commercial article, and save fruit uninjured—we can scarcely yet say unspotted—for growers and exhibitors. If the article succeeds in one object it will in the other, and we shall be pleased if it do so in both.

It is new in material, design, and application. The material is perforated celluloid, light, durable, and inodorous. The design is that of the fruits to be protected. The one before us is of the shape of a fine Williams' Bon Chrétien Pear, which it would enclose without bruising, and bid defiance to such foes as those named tasting the fruit. For

Apples, Peaches, Plums, Grapes, and other fruits to be caged with equal security the forms would differ accordingly.

For purposes of application the protector is in two parts, each with a flange, and when the halves meet the flanges are gripped with an attached movable clip, and provision is made for the stalk of the fruit—it can be caged in a moment. So can many flowers, but though we should not like to aver that the incursion of “foreign” pollen would be prevented, slugs, earwigs, woodlice, and such like despoilers would be baffled in their attempts to take the best bits off the best blooms, and thus putting them outside the charmed circle of prizewinners.

That the new protector will do all we have suggested we have not a doubt, but there is one other thing it may or may not do, and it is just the possibility of its doing it that would have led us, if present, to have voted with the Fruit Committee of the R.H.S., that though the Vicar’s protector, or rather the protector of other people’s fruit and flowers, “may prove to be the fulfilment of a long felt want, it must be tested at Chiswick before any definite award can be made.” Our reason for supporting such decision is that an opportunity might be afforded for noting the effect of the encasements on the colour of the fruit. If this is not impaired in any way, the value of the protectors will be enhanced.

No doubt the material—celluloid—suggests inflammability, but so do gauze bags if placed in proximity to the fire. But this is not the place where protectors are used, and neither one nor the other will “go off” spontaneously. If the inventor can manufacture his unique appliances so as to sell them cheaply and keep them well before the public we shall not be surprised if they command a large sale. The invention is patented in Great Britain, and in process of being similarly protected on the Continent.

NATIONAL AURICULA SOCIETY.

THE accounts which I had received from various growers as to the condition of their collections did not lead me to form very exalted notions of what I should find at the Drill Hall on this occasion; more especially were the reports from the north of a gloomy character. My friend the Rev. F. D. Horner wrote to me a few days before the show, “Not only have I not a single truss in flower but not even a pip open,” and I knew, of course, that this involved most probably all the northern growers; but I certainly was not prepared to find that Mr. C. Turner, of Slough, was not able to put in an appearance, and it is, I think, the first time that I have ever missed him at an Auricula Show; yet withal one was a little surprised to find so many stands staged. They were not, of course, comparable in numbers to those of former years, and many of the flowers bore the mark of having been subjected to more warmth than the Auricula likes to have.

There were, however, some superb flowers shown. Mr. J. Douglas, of Great Bookham, had an even and refined collection, exhibiting no trace of coarseness; especially noticeable was a beautiful plant of George Lightbody, possessing all the good qualities of that grand flower. There were some other fair blooms also, such as Mrs. Potts, which still holds its place (notwithstanding one or two defects) among the selfs. Amongst the flowers exhibited by Mr. C. Phillips was a beautiful bloom of Mrs. Henwood, a new green edge, which was also exhibited in other collections. It is a flower of superior quality, the pip being very round and flat, the edge a bright green, and the body colour dark and solid. This flower has a curious history. It was raised from a pod of seed sent to the late Mr. Samuel Barlow by Ben Simonite; it was at one time nearly lost, but the plants were sent to Mr. Henwood, under whose fostering care it struggled back to life; and the fact that it is now shown by several exhibitors makes one hope that it will soon come generally into cultivation. The Rev. F. D. Horner, as usual, was frequently shown, and here, too, its good constitution makes it a general favourite. How different from Prince of Greens, which we may have for years without getting any increase. Mrs. Phillips and Ruby are both very beautiful selfs; and although we have such fine flowers as Heroine and Mrs. Potts, there is still room for others in this charming class. There was a sharp competition for the premier prize, which was ultimately carried off by the fine green edge to which I have already alluded—Mrs. Henwood, that old-established favourite George Lightbody running it very closely.

I have always maintained that the Auricula world sustained a great loss by the premature death of Mr. Woodhead, and I think this is more and more evidenced every year. He was but a short time at the work of raising seedlings, and he only sent out four—Black Bess, Rachel, George Rudd, and Mrs. Dodwell; and looking through the lists of successful flowers at any of our exhibitions, I find that these always take a leading position, and this year has proved no exception to the rule. They were in several of the winning stands, while in the competition for single plants, grey edges, the three first prizes were awarded for two of these flowers, Rachel and George Rudd, and I am sure it must be a great satisfaction to Miss Woodhead to know that the flowers still maintain their position. I find among the prizewinners the names of many new flowers. In Mr. Douglas’ collection there is Abbé Listz, a very beautiful green edge; Lady Churchill, Cleopatra, James Hanniford, another good green. In Mr. Phillips’ stand there were also Mrs. Phillips, a fine self, and Miss Barnett. Beside these there was, as already said, Ruby, a very bright self.

It would be ungenerous before closing these few notes not to say how much exhibitors and Auricula lovers in general are indebted to Mr. Henwood for the care he has taken in advancing the interests of the Society, and for the way in which the plants were put up for the Judges on the present occasion. Of course his labours were considerably

lightened by the thinness of the exhibition, but one feels that the same quiet and business-like habit would have equally availed him had the exhibition been much larger.—D., Deal.

FORSYTHIAS.

OF the numerous hardy shrubs now flowering at Kew, the above mentioned are, without doubt, the most attractive. At almost every turn the graceful, wand-like shoots of yellow flowers meet the eye. Here a group of *F. suspensa* 8 feet high perfectly covered with flowers, there a single plant of the same species rambling over some other bush, or again a bed of *viridissima* or *intermedia* dressed in gayest costume, all adding their share to form a really grand display.

Considering the uses to which these three plants can be put, especially the first mentioned, it is a wonder that they are not used a great deal more freely in gardens than they are at present. *F. suspensa* can be employed with almost equal success for a number of purposes. Trained over an old tree, fence, pillar, or other support, or planted in beds, it is equally at home, a difference in pruning being all that is necessary to make it fit the various places. The other species, *F. viridissima* and the hybrid, *F. intermedia*, are suitable only for beds or single bushes.

To cultivate they are very easy. Cuttings put in about July root in a very short time, and a year in nursery quarters is sufficient to make good plants for planting out. Any pruning should be done as soon as the flowers are over. When *F. suspensa* is grown in beds it is a good plan to cut the plants back fairly hard, as young strong shoots are then made, 4 to 6 feet long, which bear an abundant supply of flowers.—W. D.

THE ROYAL GARDENERS’ ORPHAN FUND.

AFTER “A. D.’s” letter on page 302 of your issue of 13th April, I trust that your correspondents, “S., Yorks,” and “A Country Gardener” will be so good as to acknowledge that they did not understand the working of this Society, or the amount of work done by our Secretary. Let me ask “S., Yorks,” and “A Country Gardener” if they know of any Society doing the same amount of good that the R.G.O.F. is doing at, say, double the expense? In the town in which I live are two or three orphanages, with a staff of attendants to look after their inmates. What about the salaries of these attendants and the sums spent for the upkeep of the buildings in which they live? Must it not be that these heavy expenses are borne by the subscriptions, which were meant for the maintenance of poor orphans? One hundred guineas would not go far in meeting these heavy outgoings.

But the R.G.O.F. leaves the fatherless ones with their natural protectors; amongst their own kith and kin; and spends nothing on bricks and mortar; and excepting the Secretary’s modest salary, nothing for administration at all; but each farthing given so generously is spent so wisely, that every subscriber can rejoice in the sound financial position of the Fund, and the great benefits it is conferring on those who need and participate in it. I would recommend “S., Yorks,” and “A. C. G.” to note the letter preceding theirs, on page 257. That shows that some gardeners do take an interest in the Society and its noble work. Mr. Cummins makes the excellent suggestion that the “boxes” should be worked more. I carried one at our Horticultural Shows and netted £7 11s. 6d. One of my boys did the same, and collected £5, before he was eight years old, and has thus become a life member. A younger brother now carries the “box,” which has already nearly £4 standing to its credit. I mention these facts to show what can be done if one tries. A little done this way is worth pages of carping criticisms.

I wonder what excuse could have been made for non-subscribing if the Secretary had not been paid, which, as “A. D.” reminds us, has not always been the case? Our late Secretary, Mr. Barron, carried on the secretarial duties for some years without fee or reward of any kind, until the Committee thought the financial state of the Society allowed some small sum to be paid for these onerous duties, and after submitting the proposal to the subscribers at the annual meeting. I for one voted for it.

With such a body of business men as we have at the head of the R.G.O.F. I do not think those gardeners who do subscribe to its funds need trouble, but may rest assured that all monies are put to the very best use—viz., to maintain poor fatherless children in their own homes. Not one farthing is wasted or misapplied. It is heart-breaking that cold water should be thrown on such charitable work, especially by non-subscribers. The Royal Gardeners’ Orphan Fund is a power for good, and does its work nobly.—ANOTHER COUNTRY GARDENER.

FILBERT CULTURE IN ITALY.—It will surprise many to hear that in certain districts of Italy the Filbert crop rivals the produce of the Vine in commercial importance. These delicious Nuts are grown on bushes or shrubs, which are arranged in groups that are from 15 to 25 feet apart, so as to insure the access of plenty of light and air. They thrive best in a deep clayey soil, and the planting takes place during November and December, of slips from the mother plant. The bushes do not bear fruit until the third year. They are periodically pruned, when any slips which have failed to sprout are removed and replaced by others; so that there are plantations which remain in full growth, although nearly a hundred years old. The Filbert is not subject to the diseases common to other crops, but it suffers severely from hailstones and from cold winds.—(“Indian Gardening.”)

FORCED CHERRIES.

I OFTEN wonder why Cherry houses are not common in gardens. The trees are easily grown in pots in any light airy structure, with sufficient hot-water pipes to maintain a temperature of 50° to 55° in the severest weather, and they need not be kept under glass for more than half the year. When started at the New Year, such fine varieties as Early Rivers, Belle d'Orleans, Empress Eugénie, and Governor Wood afford a supply of welcome and delicious fruit in May and June without much forcing. After the fruit has been cleared off the trees they can be placed outdoors, plunging the pots in ashes in an open situation, and duly attended to for water, and keeping the foliage clean, will be in excellent condition for forcing again, the fruit ripening somewhat earlier in the second than first year of forcing. The house will thus be at liberty for producing a crop of Cucumbers, Melons, or Tomatoes, as may be desired, and two crops had from the structure in one season.

Thus the culture of trees in pots has an advantage over that of the planted-out system. Still trees can be grown very successfully when planted in borders, and for early work these should be wholly inside, and neither too wide nor too deep. A border two-thirds the width of that of the trellis, 18 inches depth of soil and a foot of drainage, the top 6 inches of chalk or old mortar rubbish, answers well. Cordons 2 feet apart quickly cover the trellis, which should be about a foot from the glass. The roof-lights of planted-out Cherry houses should be movable, and provision must be made for ample ventilation, also due regard had to efficient heating, for Cherries cannot endure a close atmosphere or heat radiated at a high temperature.

Whether the trees are in pots or planted in the borders, the fruit of those started at the new year will be ripening. On the first indications of this the fruit must be kept dry, but the house should have atmospheric moisture furnished by damping the surface of the borders and paths occasionally. Admit air constantly, or condensation will take place, and moisture being deposited on the fruit, it will be ruined by cracking, and instead of having an agreeable, be given an unpleasant flavour. This is a main point in growing Cherries under glass. Another is not to allow the trees to suffer from dryness at the roots, but the soil be kept in a moist condition, an examination being made daily of trees in pots, and those in borders periodically, and whenever a supply is needed afford it thoroughly without delay.

Trees in pots require the leading growths pinched at about the sixth leaf and side growths at the third joint. Those on trellises must have the shoots tied in as they advance in growth, leaving no more than are necessary for furnishing the trellis regularly, allowing sufficient space for the spurs, and top those not required for training in at about the fifth leaf, pinching subsequent growths to one leaf.

The house should be freely ventilated on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to insure a circulation of warm, moderately dry air. Netting will be required over the ventilators to prevent the birds attacking the Cherries. Black aphides must be kept under by dipping the shoots or leaves in tobacco water. This pest soon spoils the fruit, therefore keep a sharp look out and destroy the first and every one seen.—YORKSHIREMAN.

THE YOUNG GARDENERS' DOMAIN.

NEW ZEALAND SPINACH.

SPINACH is one of the most useful green vegetables that we have, and is in great demand during the summer and autumn months. But in hot dry weather there is often a difficulty in maintaining a constant supply of good succulent leaves from the ordinary variety, owing to the plants running to seed ere they have attained any size. New Zealand Spinach will prove a splendid substitute, and though not so good in quality, it is less trouble to grow and far more remunerative. Being a native of a warmer clime than ours, it requires a warm and sheltered spot when planted out. Our *modus operandi* is as follows.

We sow our seeds in April in an ordinary seed pan, and place in a hotbed till germination takes place, when they are removed to a vinery shelf close to the glass, in a night temperature of 55°. As soon as the seedlings are large enough to handle, they are placed three round the sides of 48-pots, using ordinary loam as a compost, and allow them to remain in the vinery; when they have recovered from the slight check they are transferred to a cold frame to receive another shift into a 24-pot later. Keeping the plants three in a pot, we grow half a dozen pots in this manner, picking out the three best for a prepared border, the others we plant amongst the Gooseberry bushes to take their chance. This Spinach is of a spreading habit, therefore it must have ample space. Our most suitable place for planting is a wide border facing south, with a rich compost, making up three mounds, 4 feet apart, each composed of one barrowload of well decayed stable manure to one of garden soil; by so doing the roots are kept much warmer than when planted on the flat.

We consider it less trouble to grow the plants in pots, and give the shelter of a cold frame, planting in June, than to plant out earlier and incur the risk of cold winds and rain, which would lead to extra trouble in covering, besides giving the plant a severe check. By protecting the Spinach with mats in the autumn we have had a good supply up to the middle of November.—PARVO.

THE GOOSEBERRY.

AMONGST the many different fruits which are at present grown Gooseberries take a very prominent place, as they are always useful either for dessert or culinary purposes. The best system to adopt

in making a new plantation is to obtain from some of the leading nurserymen young trees of good sorts, the names of which are hardly worth mentioning, as there are so many from which to choose. Obtain trees with long stems, for if the branches are very close to the ground many of the fruits are spoilt, and it is difficult to do the necessary cleaning amongst the bushes during the summer. Previous to planting the ground should be well manured and deeply dug at the end of autumn, so that the early frosts can get into it. November is the best time for planting, or as soon as the weather permits. The distance between the rows should not be less than 5 feet, but if young trees are being planted they may be placed 2 feet apart in the rows, so that when they have grown and are touching each other, every other one can be lifted and planted afresh. In planting do not bury the roots too deeply.

It is advisable during the winter and early spring to sprinkle a little lime over the trees occasionally to prevent the birds from destroying the buds, and it is best done after a shower of rain. The pruning should be left until the beginning of February, as it can then be seen what to cut out, but if newly planted they will require little pruning, merely shortening the longest growths. Gooseberries are lovers of air and light, so when pruning old trees the centres should be kept perfectly open.

During the summer, if the weather is very hot, it will be found beneficial if some light manure is placed between the rows to prevent evaporation. If the trees have a heavy crop of fruit on them it will be necessary to thin them if large fruits are required. It may be done when they are about the size of peas, or a little larger, as they will then be useful for cooking. The fruits for dessert will require netting when they commence to ripen to keep birds from them, as these pests are very destructive. I may say, if fresh plantations are made the space between the rows can be utilised for such plants as Cauliflower, Cabbage, or any of the Borecoles; a single row will be sufficient.—P. R.



HARDY FRUIT GARDEN.

Disbudding Fruit Trees.—All fruit trees which are cultivated on walls, and to some extent restricted trees in the open, especially young stock, require more or less disbudding or rubbing out superfluous shoots. The practice of disbudding is employed chiefly on Apricots, Peaches, and Nectarines, and it is to these trees that attention should be first directed.

Apricots.—These trees on walls must now be frequently examined, and all the useless and superfluous shoots carefully removed. Many of the growths of Apricots which cannot be tied or nailed in May, if well placed, be pinched to several leaves for forming spurs. It is not desirable, however, to encourage spurs in inconvenient places. Short stubby shoots do not require removal, as these are natural spurs, and will produce fruit. Longer growths pinched back to three leaves will eventually form artificial spurs of a fruiting character. There is the danger of originating too many and crowding the trees. The best placed of the current season's growths may be laid in freely but not thickly. The rest which are not wanted for any purpose may be cut out entirely. These details, if carried out gradually, will not distress the trees or check growth.

Peaches and Nectarines.—In commencing to disbud, deal with the upper parts of the trees first, rubbing or cutting out the ill-placed shoots and those next to the wall, which cannot possibly be of any use. Make a selection of the best shoots for retaining to eventually lay in. One must be at the base of the current bearing shoot, and another should extend above the fruit in order that the latter may have a due supply of nourishment. The formation of artificial spurs is not so freely adopted with Peaches and Nectarines, as the best fruit is produced on young wood, and it is usual for the whole crop to be produced on wood of this character. The most vigorous parts of the trees should be disbudded first, leaving the more weakly parts to strengthen for a time. Leave the shoots on the upper parts of the branches for extending, and the under sides clear. Strong, sappy growths are not desirable for retention, such invariably starting from dormant buds in the old wood. They indicate rather deep root action. The best way of dealing with them is to rub or cut them clean out.

Plums and Cherries.—Disbudding the growths on these fruits is chiefly confined to wall trees and young specimens in the course of formation. In all forms of training disbudding is largely of assistance in shaping the trees, and preventing an undue extension of wood and crowded shoots to develop in summer. A set of principal branches must be originated, and spur growths gradually formed upon them in front. During this process disbudding is useful in making a proper selection, and it is obvious that when the spurs are older there will be a number of growths early requiring removal. For instance, ill-placed shoots develop behind branches and spurs. These must be rubbed or cut out as soon as possible. Growths that are well placed may be too numerous, in which case a selection must be made of the best, and it will require a certain amount of firmness to avoid retaining too many. When there are ample principal and secondary growths the strong sappy growths, or robbers, starting from various parts of the trees, should be early reduced or removed.

The treatment of the Morello section of Cherries is similar in every respect to Peaches and Nectarines. Fruit is freely produced on young growths of the previous year, and the aim of the grower must be directed to securing a good selection of medium-sized growths to lay-in for the succeeding year. The best for this purpose can only be resolved upon by proper examination, but it will be found that one, or not more than two, as near the base of the current bearing shoot as possible, are the best. A combination of spurs and young shoots for laying-in is favoured in some cases, but there is little doubt that decidedly the best results are secured from the annual renewal.

Apples and Pears.—Disbudding in spring on many wall trees is more needed than practised. Old established trees are not only too much crowded with spurs, but are very much overloaded with growths from them, as well as new shoots from dormant buds. As, soon, therefore, as possible when growths push forth attention should be directed to the removal of any likely to be superfluous. Much good will result from this, giving the better growths more room. Young trees may be trained and regulated in any shape or form by judicious disbudding in the early stages. Much of the spray growth in standard trees might readily be reduced by rubbing it out when young, instead of allowing it to develop into long shoots which need cutting out. Cordon Apples and Pears should be specially attended to in the matter of disbudding, inasmuch as a fruitful condition is an important point. The errors of overcrowding are quickly apparent in this form of culture, therefore every endeavour ought to be made to induce the formation of good growths, and afford them every opportunity of maturing well.

FRUIT FORCING.

Cucumbers.—Plants in hot water heated pits or houses may be syringed with clear rain water twice a day, so that every part of the foliage may be kept free of red spider, but it must be done without damaging the leaves, which are brittle and easily injured. Plants in full bearing require liberal and frequent applications of liquid manure at a temperature about the same as the bed, but do not supply it so as to cause a soft growth. Avoid crowding and overcropping. Maintain a night temperature of 65° to 70°, and 70° to 75° by day artificially, and as the fire heat is lessened there will be less need of moisture, but this must be well sustained to insure healthy and clean growth in foliage and fruit. Attend to the necessary stopping, thinning, and tying of the shoots, maintaining a succession of fruitful growths.

Plants in pits and frames should be frequently seen to for the regulation of the growth, keeping them rather thin, stopped to one joint beyond the show of fruit, and removing bad leaves as they appear. A sprinkling at closing time will be sufficient for the plants, not allowing them to suffer for lack of moisture at the roots. Ventilate early, increase it with the heat, and close in the afternoon so as to maintain a good temperature well into the night. Attend to the linings, taking care to prevent rank steam getting into the frames or pits, and afford covering over the lights for some weeks longer, or until the weather becomes so warm that the night temperature of the frame does not fall below 65°.

Melons.—*Early Plants.*—Directly the fruit commences to ripen lessen the supply of water at the roots, but not so as to distress the plants, for if the foliage has been kept clean and the roots in good condition a second crop of fruit may be had. Atmospheric moisture should be withheld, and a circulation of dry warm air insured, increasing the temperature to 70° or 75° artificially, and 80° to 90° with sun heat. Cracked fruits are mostly produced by keeping the plants too dry during the swelling period, and by a close and moist atmosphere with too much water at the roots when ripening, which induces an excess of sap and consequent effort at growth. Cut the fruits before they are very ripe, keeping them on shelves in a warm house until they are in proper condition, or they may be removed to a fruit room for two or three days to become equally ripened all over.

Successional Plants.—Fertilise the blossoms when fully expanded, the atmosphere being kept rather drier and warmer, and ventilation attended to early, with a little constantly if there is danger of moisture condensing on the blossoms. Stop the shoots at the time the fertilisation is done one joint beyond the fruit. To insure a full crop have a number of fruits on different plants in the same stage of growth. Earth the plants with some rather strong and rich loam after the fruits begin to swell, ramming it firmly, placing a little fresh lime round the stem to prevent canker, and if it appear rub the quicklime well into the affected parts.

Plants swelling their fruits should be syringed freely in hot weather at about 3 P.M., or earlier if necessity arise for closing, damping the floor in the morning and in the evening, using liquid manure occasionally. Shade only to prevent flagging. Ventilate freely in favourable weather, commencing from 75° to 80°, increasing or decreasing it during the day as may be necessary, maintaining a day temperature of 80° to 85° or 90° with sun heat, closing between 80° and 85°. If red spider or white fly appear, cover the hot-water pipes with a thin wash of flowers of sulphur and skim milk, and for aphides and thrips fumigate on two or three successive evenings.

Train the growths of plants in pits and frames regularly, avoiding overcrowding, and when the blossoms appear, fertilise them about mid-day. Maintain a good bottom heat by linings, and admit a little air if there is danger to be apprehended from rank steam. Employ thick night coverings, as the nights are yet cold, but do not allow the covering to hang over the linings of fresh manure, and so injure the plants by introducing steam into the interior. Sow seeds for raising plants to put out in pits and frames as they become cleared of bedding plants, and pot the seedlings as they require it.

Peaches and Nectarines.—*Earliest Forced House.*—The very early varieties are now ripening, and the trees must not be syringed, but the border should not be allowed to become dry. As the fruit of the other varieties will not be ripe for some time yet, the atmosphere must be kept genial by sprinkling the borders and paths as they become dry, syringing the trees in the morning, and again when closing the houses. The night temperature may be kept at 65° to 70°, but 5° less, though it will retard the ripening, will not tax the energies of the trees so much as the higher temperatures. Leaving the ventilators slightly open constantly at the upper part of the house will be an advantage. In the daytime, 70° to 75° by artificial means, and 10° to 15° more with sun heat, will be suitable temperatures.

Trees Stoning the Fruit.—Do not hurry the trees undergoing this process, 60° to 65° at night is ample, and 70° to 75° by day, avoiding high night temperatures and sudden fluctuations. A little air left on at night will prevent the deposition of moisture on the foliage through the night to any serious extent; enlarge the openings when the sun acts on the house, yet, without lowering the temperature, which should advance with the increased power of the sun, and a corresponding increase of ventilation. Fumigation should, if possible, be avoided. It dries the atmosphere, and not infrequently cripples the foliage, when the fruit may from the check be seriously imperilled and fall. Early closing is an advantage, but it must not be done to the extent of undue excitement, nor continued until late, the temperature being allowed to fall with the declining sun. It is also advisable to allow a little extra latitude to the growth, but on no account permit foliage to be made that must afterwards be removed in large amounts. The growths should be secured in position as they advance.

Trees Swelling their Fruits.—The fruit swells rapidly in the early stages, and up to the commencement of the stoning process. The swelling of the fruits is materially assisted by the maintenance of a genial condition of the atmosphere and the means employed to secure a good root action, which is best effected by a judicious and gradual regulation of the growth by the process of disbudding and in thinning the fruits. These operations should be done carefully, the more vigorous the tree the greater the danger of the fruit being cast in stoning, and the evil is often aggravated by previously disbudding severely, which favours strong growth more than steady progress. Supply water thoroughly to inside borders when necessary, lay in the shoots so as to induce them to grow in the proper direction, allowing room in the ligatures for the swelling of the growths. After the fruit has stoned it takes the last swelling, when the shoots should be well tied down, but a moderate extension of growths will materially assist the fruit in swelling. Any leaves that shade the fruit should be drawn aside or shortened, and fruits on the under side of the trellis must be raised on pieces of laths across the wires.

THE BEE-KEEPER.

CLOSING THE ENTRANCE OF HIVES.

How long will bees live during the dull days of winter if the entrance is entirely closed? This is of interest to bee-keepers who reduce the entrance to their hives more than is really necessary. Not long ago a case in point came under our notice. In an apiary in which there were several strong colonies of bees which had a tendency for robbing last autumn, the entrances were reduced so that only one bee could pass through at a time. No further notice was taken of them until quite recently, when they were examined so as to ascertain if they required feeding. One can imagine the surprise of the bee-keeper who, on more than one occasion during the winter had tested them for weight, to find one of the heaviest hives, minus a live bee. All the bees were dead between the combs. They had evidently been dead for several weeks.

On examining the entrance it was found to be quite closed. The doors moved easily when touched, and had doubtless been closed accidentally by the wind. How long they had been in this condition it was impossible to say with any degree of certainty. We are inclined to think that bees would live for several weeks with the entrance quite closed if a low temperature prevailed the whole of the time, as the majority of hives are not made so close fitting in every part but that a little air could get in; but should the sun come out brightly and strike directly on the entrance it would excite the bees, and in their endeavour to get out they would soon become suffocated.

In the case alluded to we were enabled to examine the hive a few days after it was discovered. The dead bees were still clustered between the combs, and had evidently been suffocated. This should be a warning to bee-keepers to examine the entrance to their hives at least once a week throughout the winter. The accidental closing of the door would then not be followed with such serious results. There is much less danger of an accident of this kind when the entrance is left open its full width throughout the winter.

FEEDING STOCKS.

It is important that bees should be supplied with ample stores at all times. If they cannot obtain it naturally then it must be supplied

to them artificially. This is more apparent during the breeding season than at any other. Unless there is a regular supply of food provided the queen will not continue laying. Any bee-keeper may easily prove this fact, as where there are several colonies some will be much shorter of stores than others. The stock having ample stores, and headed by a young fertile queen, will at this season have several combs filled with brood. Another colony, which is short of food, will be weak, and there will probably be only a small patch of brood a couple of inches in diameter. The latter queen may be quite as good as the former, but she will not lay more eggs or raise more brood than there is food for.

A change will, however, come over the scene directly gentle feeding takes place. This is best done by giving half a pint of warm syrup in the evening—a small quantity given daily is much better than rapid feeding as practised in the autumn. Syrup for spring feeding may be made in the proportion of 1 lb. of sugar to one imperial pint of water. This should be boiled until the sugar is dissolved; it is then ready for use. A bottle feeder, over the mouth of which a piece of thin muslin has been strained, this will prevent the syrup escaping at a too rapid rate. The bottle should be inverted directly over the brood nest, and if a piece of perforated zinc is placed on the top of the frames it will prevent the bees escaping. The hole in the quilt need not be cut larger than the top of the bottle.—**AN ENGLISH BEE-KEEPER.**

TRADE CATALOGUES RECEIVED.

W. Clibran & Son, Altrincham.—*Plants.*

J. Veitch & Sons, Ltd., Chelsea.—*Plants and Nymphæas.*

Vipan & Headley, Leicester.—*Garden and Farm Appliances.*



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, ROSE HILL ROAD, WANDSWORTH, S.W.,** and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Brunfelsia eximia (*Inquirer*).—The *Brunfelsia* may be grown in a cool stove or warm greenhouse, but not in an ordinary greenhouse with the temperature at 45° or less in winter time. *B. grandiflora* is the hardiest species, and does excellently in an intermediate house. It is a native of Peru.

Spaces Round Fruit Trees (*O. F.*).—It would be much better to fill the spaces 12 inches wide round fruit trees with decayed manure than to plant in them summer-flowering plants or annuals. Of course, by giving liquid manure the plants would not materially prejudice the fruit trees, still they are better without than with the encumbrances.

Charcoal (*Scotland*).—This substance is not a fertiliser, though useful for many purposes, such as mixing with potting soil to keep it sweet, absorb ammonia, and in other respects act beneficially. Some growers use about one part to sixteen of potting soil for rendering the soil porous and facilitating drainage, and the roots of many plants cling to charcoal before anything else, such as Orchids. It absorbs carbonic acid and other gases, and some consider that they are yielded up to plants as required for nourishment.

Rondeletia (*Rogiera*) **brilliantissima** (*S.*).—It certainly requires an intermediate temperature, though we have had it very fine in a greenhouse where the temperature has ranged from 45° to 50° during the winter. The plant does best in a border, as upon making a good growth depends its producing fine panicles or corymbs of bloom.

Climbers for a lofty Conservatory (*J. E.*).—*Acacia Riceana*, *Bignonia jasminoides*, *Clematis indivisa lobata*, *Habrothamnus elegans*, *Passiflora Comte Nesselrode*, *P. Imperatrice*, *Tecoma Van-Volkemi*, *Solanum jasminiflorum floribundum*, *Plumbago capensis*, *Clianthus panicum magnificum*, and *Cotonea scandens variegata*. *Lapageria rosea* and *alba* are very fine, and require to be trained near the glass.

Are Peacocks Mischievous in a Garden (*Idem*).—Very, they are vegetarians with a strong appetite, and devour almost anything in the green stuff way. They kept us one season almost entirely without Peas, clearing them from the rows in the ground.

Shrubs for Poultry Run to Afford Shade (*W. H. T.*).—These we have seen succeeding, and apparently liked by the poultry, were—Common and Purple-leaved Hazel, Common and Golden Elder, Blackthorn or Sloe, Common and Scarlet Dogwood, Common and White Lilac, Evergreen and Oval-leaved Privet, Common and Variegated Holly, Flowering Currant, and Cotoneaster Simmonsi. In large spaces we have noticed fowls fond of dusting under *Cupressus Lawsoni*, Hemlock Spruce, and English Yew.

Fruit Trees for Ornament (*F. D.*).—We do not know of any pamphlet on this subject. The planting of Apples, Plums, Medlars, Quinces, Siberian Crabs, and other fruits, has been several times advocated in the *Journal of Horticulture*, but if the articles could be traced the numbers containing them would probably be out of print. We scarcely think you need any guidance on the subject, as your letter indicates that you are fully aware that beauty with utility may be combined in many gardens by planting fruit trees judiciously in association with other ornamental trees and shrubs.

Dog's-tooth Violet not Succeeding (*Aprille*).—This bulbous plant does not succeed well on heavy clay soil, especially when very cold and damp. But why not take out a foot depth of the "clayey foundation," place in that depth of rubble, and on this a foot thickness of good soil, say a mixture of equal parts of loam and peat? Of course it is no use making a pit to hold water, as that in the clay would be without a drain to carry off the superfluous water. The best time for replanting is immediately after the leaves die away, inserting the bulbs about 3 inches deep. It may be grown in pots in a cold frame, removing to the greenhouse when in flower.

Apple from Old Tree (*E. G.*).—The fruit is the Wanstall (Wanstall Jack, Jack-in-the-Wood) a dessert Apple of the first quality, which "originated at Green Street, near Sittingbourne in Kent, with a tailor of the name of Wanstall about the beginning of the present century."—(Dr. Hogg's "Fruit Manual.") It is very handsome, skin golden-yellow on the shaded side, but red, which is striped and mottled with darker red on the side next the sun, roundish, but narrowing towards the eye, giving a conical appearance. Flesh yellow, firm, crisp, juicy, rich sugary, and highly flavoured. It is, as you say, very hard when first gathered, and will keep till May and June.

Establishing a "Mistletoe Farm" (*Worcester*).—We have only seen one orchard made to grow Mistletoe. It was an old one, and the Mistletoe berries were simply placed or burst on the smooth parts of the branches, especially those of an inch or two in diameter, and on the under side of them in patches of two or three at a yard distance along them, placing the seeds an inch apart. By bursting the berries on the bark the seeds adhere fast enough. There is no need to make incisions and squeeze the berries into them. Mistletoe always commands a market, but it goes through so many hands that the growers receive the least share. In ten years the Mistletoe would be grown sufficiently to bring in a fair return. We have had good "boughs" at seven years.

Hard Substance at the Eye of Figs (*G. K.*).—The hardness is caused by a fungus, the "spot," *Gloeosporium fructigenum*, which is perhaps induced by moisture settling at the eye, and giving the parasite a nidus. The best thing we have found was to use a little sulphur on the hot-water pipes, and admit air day and night. The circulation of air prevents the deposition of moisture on the fruit. Unfortunately the finer the fruit the more they are liable to attack, and that means that the structure requires to be kept drier and warmer, and more airy. We have also found a dressing of air-slaked chalk lime useful, applying a pound per square yard, and pointing-in lightly. There does not appear to be any imperfect fertilisation of the flowers at the upper part of the fruit.

Ants and Flowering Melons (*Wabara*).—You say that "ants are eating the essential organs clean out of the flowers" of your Melons. We have known a similar case. If you cannot prevent the ants ascending the stems by destroying the marauders, sponges dipped in treacle and water and placed among the plants will act as counter-baits, and lure many of the little pests to their doom if the sponges taken possession of are dipped in boiling water. If their nests or haunts can be found, a correspondent some time ago stated that a mixture of one part XL All insecticide and fifteen parts water poured in or among them will quickly reduce their numbers. A solution of camphor made by dissolving a lump the size of a walnut in a gallon of boiling water destroys those it reaches and tends to keep the others at a distance. Lumps of camphor placed about their runs is said to be a good deterrent, though we have not tried the plan. Perhaps some of our correspondents may describe methods of extermination that they have found effective.

Inga Seed (J. C. S.).—There are several species of Inga that are grown for their seed in the warmer parts of South America, principally of Guiana and Brazil, some being used for one purpose and some for another. That you allude to is probably the produce of *Inga vera*, chiefly used as a purgative. It is a native of the West Indies. There are several species with poisonous seeds, but Inga seed is that named, and causes dysentery in fowls.

Staphylea colchica and Lilac Marie Lagrange after Flowering (Idem).—They will flower again, only place them outdoors in an open situation after they have been properly hardened, attending to them for water, keeping clean in foliage, and supplying liquid manure occasionally; or plant them out in the open ground as soon as they have been hardened off and the weather becomes mild, where they will recuperate, and be available again after a year or two for flowering in the greenhouse.

Warts on Vine Leaves (J. H.).—The small excrescences on the under side of the leaves are not caused by fungus, but extravasated sap, or sap forced out of its proper channels. It is induced in the case of healthy Vines, as yours appear to be, by too much moisture in the atmosphere and a fully too high night temperature, under which conditions the sap vessels are liable to be attenuated. It also arises from a contraction of the vessels, but we doubt if this is so in your case. With care in maintaining a healthy buoyant atmosphere you will have little to fear, though a dressing of lime to the border, making it white, and lightly pointing in, might be further advantageous. We have seen excellent Grapes follow many worse cases of warting than in the leaves you send.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Z. D. R.).—Through misdirection your box was delayed, and the contents were quite dead on receipt. All specimens for identification, as well as letters relating to Editorial matters, should be addressed to the EDITOR, JOURNAL OF HORTICULTURE, 8, ROSE HILL ROAD, WANDSWORTH, LONDON. (T. C.).—Both specimens are forms of *Fritillaria meleagris*, commonly known as the Snake's Head Lily. (C. D.).—1, *Cœlogyne pandurata*; 2, *Dendrobium fimbriatum oculatum*; 3, *Cattleya Trianae delicata*. (B. P. S.).—1, *Primula rosea*; 2, *Scilla bifolia*. (J. H.).—1 and 3, species of *Metrosideros*, and this is all that can be said about them without flowers; 2, probably a *Justicia*, flowers required for positive identification; 4, one of the many forms of *Pteris tremula*; 5, *Phormium tenax variegatum*; 6, *Celsia arcturus*. The soft-leaved specimens were withered through not having been packed in fresh grass. See above instructions. For Vine leaves see another reply. (J. P.).—The specimen, which arrived fresh and bright through good packing, is *Celsia arcturus*. It is a native of Candia, and was introduced in 1780.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne.

COVENT GARDEN MARKET.—APRIL 26TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Grapes, lb. ...	1	6	St. Michael's Pines, each	2	6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0	Onions, bushel ...	3	6
Beet, Red, doz. ...	1	0	Parsley, doz. bnchs. ...	2	0
Carrots, bunch ...	0	3	Parsnips, doz. ...	1	0
Cauliflowers, doz. ...	2	0	Potatoes, cwt. ...	2	0
Celery, bundle ...	1	0	Salsafy, bundle ...	1	0
Coleworts, doz. bnchs. ...	2	0	Scorzoneria, bundle ...	1	6
Cucumbers ...	0	4	Seakale, basket ...	1	6
Endive, doz. ...	1	3	Shallots, lb. ...	0	3
Herbs, bunch ...	0	3	Spinach, pad ...	0	0
Leeks, bunch ...	0	2	Sprouts, $\frac{1}{2}$ sieve ...	1	6
Lettuce, doz. ...	1	3	Tomatoes, lb. ...	0	4
Mushrooms, lb. ...	0	6	Turnips, bunch ...	0	3

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2	0 to 3	Lily of the Valley, 12 sprays	0	4 to 0
Asparagus, Fern, bunch ...	2	0	Marguerites, doz. bnchs.	4	0
Azalea, white, doz. bnchs.	3	0	Maidenhair Fern, doz.		
Camellias, per doz. ...	1	0	bnchs. ...	6	0
Carnations, 12 blooms ...	1	6	Narcissus, doz. bnchs.	1	0
Daffodils, single yellow, bch. 12 blooms ...	0	6	Orchids, var., doz. blooms	1	6
Daffodils, double, bunches	0	4	Pelargoniums, doz. bnchs.	4	0
Eucharis, doz. ...	2	0	Roses (indoor), doz. ...	2	0
Freesia, doz. bnchs. ...	2	0	„ Red, doz. ...	2	0
Gardenias, doz. ...	1	0	„ Tea, white, doz. ...	2	0
Geranium, scarlet, doz. bnchs. ...	4	0	„ Yellow, doz. (Perles)	2	0
Hyacinths, Roman, bunch	0	4	„ Safrano, doz. ...	2	0
Lilium Harrisii, 12 blooms	3	0	Smilax, bunch ...	2	0
„ longiflorum, 12 blooms	4	0	Tulips, bunch ...	0	4
Lilac, bunch ...	3	0	Violets doz. bunches ...	0	6
			„ Parme, bunch ...	2	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0 to 7
Aspidistra, doz. ...	18	0	Foliage plants, var., each	1	0
Aspidistra, specimen ...	5	0	Lilium Harrisii, doz. ...	24	0
Crotons, doz. ...	18	0	Lycopodiums, doz. ...	3	0
Dracæna, var., doz. ...	12	0	Marguerite Daisy, doz. ...	6	0
Dracæna viridis, doz. ...	9	0	Myrtles, doz. ...	6	0
Erica various, doz. ...	9	0	Palms, in var., each ...	1	0
Euonymus, var., doz. ...	6	0	„ specimens ...	21	0
Evergreens, var., doz. ...	4	0	Pelargoniums, scarlet, doz.	8	0
Ferns, var., doz. ...	4	0	Solanums, doz. ...	6	0
„ small, 100 ...	4	0			



MAY, 1823.

IN turning out an old box of books we came on a most interesting find—a shabby old number of “The Farmer’s Magazine,” published quarterly in Edinburgh, on bad paper, about sixty-four pages of matter, and sold for 3s. The motto on the cover runs thus—

Ye generous Britons venerate the plough,
And o’er your hills long with drawing vales
Let autumn spread her treasures to the sun.—Thomson.

Who reads Thomson now? Has he not gone the way of many other minor poets?

History repeats itself, we are told; and were some of the articles in this old magazine read aloud, they might easily be taken for extracts from the current number of the Royal Agricultural Society’s Journal. There is so much about prices and rents, before and after “the war.” What war is not mentioned? We suppose the minds of men were still full of the Continental troubles, which were only terminated by the complete defeat of Napoleon in 1815.

When we consider that at that date our National Debt reached £880,000,000, that bread was dear, that the harvest of 1817 was a failure, and that there was no line of fleet Atlantic greyhounds to bring us bread stuffs from America, we cannot wonder at the general distress. In 1799 and 1800 rents began to rise; provisions were dear. They went down in price, but the rents were not abated. Again, 1811 and 1812 there was a time of good prices, so that speculation in land became rife; fancy prices prevailed, and so the land made far more than its real value—i.e., that is taking the average prices for say, twenty-five years.

In 1823 there was an improvement in the price of farm produce, but not enough to indemnify the farmer, where rents had not been abated upon leases taken from 1808 to 1820. The wage bill was not a heavy one in 1823. In Scotland men from 1s. 2d. to 1s. 4d. per day, women 8d. to 10d.; in Cumberland 1s. per day, with food.

But even at these low wages we find many men were out of employment in Norfolk, where good Wheat was making up to 68s. per quarter. It appears that in the autumn of 1822 corn was low in price, but with the backward spring of 1823 and short supplies the

price rose rapidly. Farmers had sold their Barleys at 24s., only to buy back seed at 36s. per quarter. As the spring was late sowing was late also, and the ground in poor condition as a seed bed. It is strange to hear of Wheat exported to South America and the States, but the fact remains.

Even in 1823 some of the advanced men were trying experiments at extra pulverisation, by slicing the soil with coulter instead of resorting to repeated cross ploughing. Nothing beats a good mould, be it for field or garden. Permanent pasture sowed down with the Wheat crop was in vogue, and the remark is made that this practice is rapidly gaining ground among the best farmers—i.e., most advanced. A rise of 1½d. per lb. is heralded as of benefit to the grazier—for the corn farmer there is nothing but depression. Fat cattle were worth from 6s. to 7s. per stone. On the 3rd of May Potatoes were still to plant in Scotland, while the remainder of last year's crop were only worth from 8d. to 1s. per cwt. It must have required a good heart to set them again. Faith is a distinctive article in the farmer's creed.

At the end of April many farms in Berwick were yet to let. Several would not be let at all, but remain on the hands of the landlord. Of these estates, says the Journal, "they cannot well be turned to worse account." That is a sad reflection on the farming capabilities of the landlord or his agent.

Another writer advocates more attention to dairy work, asserting that the grain and other farm produce have gone down in price, yet butter and cheese have fairly held their own. He also calls attention to the excellent market there is for veal, giving as an instance that calves four to six weeks old fed entirely on milk have been sold from £3 10s. to £5 10s. Veal is always in demand, especially in a manufacturing district where money is plentiful.

The highways come in for a few remarks. We do not quite agree with them. The suggestion is that certain parishes should be grouped together, and expenses paid out of a common fund. That is all very well if, first, all the roads be put into what we may term "tenantable repair;" but we know a case in point where some roads were rated at 10d. in the £, and were grouped with roads in other parishes that were rated at 2s. 6d. in the £. It seems hard that those surveyors who have done their roads well should be made to bear the deficiencies of their less careful neighbours. Any road can be made good, provided the management is right—i.e., the best of granite, constant scraping, and intelligent road menders—and once made, a road need be of very little annual cost.

An Irishman asks a question we have never seen asked before—perhaps this is our ignorance. He wants a recipe for blackening stone walls for fruit trees, such as should be durable and economical. Will the Editor tell us the reason for this?

Other old writers are much agitated about bimetallism, only they do not call it by that name. Others, again, are worried about uniformity in weights and measures. We were much puzzled at a term constantly recurring—"per boll"—and we have not yet quite arrived at the proper definition.

[The old Irishman's object in blackening the wall was doubtless to make it warmer. A white surface reflects the sun's rays, a black surface absorbs them. If a thermometer with a clear bulb exposed to the sun indicates, say, 100°, the bulb, if blackened, will induce a rise of 10° or more very quickly. The reflection of intense light and heat from a white wall exposed to hot sun thus acting on the under sides of the leaves is not conducive to the healthy growth of plants growing against such wall, while black surfaces may be too hot for a time in certain positions, though they are generally preferable to white, if either of the two extremes must be chosen. Seeds germinate more quickly during early spring in very dark than in very light-coloured soils, and hoeing among early Cabbages expedites growth in spring, because the darker upturned particles absorb more of the sun's warmth than does the more or less bleached and smooth surface.

As to the word "boll," the definition which "puzzled" our excellent coadjutor will probably have "arrived" before these lines

are printed. The word is derived from the old English *bolle* (Anglo-Saxon *bolla*), and means a bowl or vessel, and may be of wood, hence the line by Longfellow—

"Brought them *bolls* of food in basswood."

Basswood is wood of the American Lime tree (*Tilia americana*); but more to the point is the fact that "boll" was an old Scotch measure. For Wheat and Beans it contained 4 Winchester bushels; for Oats, Barley, and Potatoes, 6 bushels; a boll of meal, 130 lbs avoirdupois.

From "bowl" to "bowled" is a quick transition, as some of our cricketing friends will soon experience. We should be pained, however, to bowl out our talented farmer, or he might be constrained to throw Shakespeare at us:—

"Alas! I had rather be set thick i' the earth,
And *bowled* to death with *Turnips*."

WORK ON THE HOME FARM.

A few more samples of British weather! Since our last we had four days of continuous rain, followed by bright sunny days, but a night temperature reaching as low as 19° Fahr. The rain quite stopped all work on the land, as it would have been worse than useless to take horses upon it, so the animals have had a needed rest, and the men turned their hands to the yards, where there was a quantity of manure intended for Swedes in the home field. This has been all moved and thrown up into hill ready for carting out when required.

This labour will be repaid in the better condition of the manure for spreading, as well as in the preservation of ammonia through diminution of the heating process, so wasteful of it. Years ago, when artificials were less valued, and muck more so than nowadays, farmers made a general practice of turning over their manure heaps once at least, but often more. We seldom see men employed at such work now. We suppose that this is one of the things that has been dropped in the interests of economy, or perhaps in some cases because, though the money is there to pay them, men cannot be had to do anything more than is absolutely necessary.

Everywhere we hear complaints of scarcity of labour, and what is worse, of the utter incompetence of so much that is available. The smarter of the village youths either go into shops or obtain office work, whilst others get employment on the railways, or in the large manufacturing towns. Those left behind take little interest in farm work, though they are gaining a livelihood by it; they rather avoid becoming specially competent in any one branch, such as hedging, stacking, thatching, or sowing. Few of the old hands have not some line of work for which they are specially distinguished, but their sons do not care for such distinction. Every day, therefore, skilled hands become scarcer and command higher wages. Surely there should be sufficient encouragement then for a young labourer's ambition, when to a good wage he can add the healthy freedom of a country life.

[Hundreds of labourers are happier and more settled than are numbers of unfortunate gardeners.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. April.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.	
Sunday 16	29.612	43.3	41.5	N.	44.9	52.1	39.2	94.9	34.3	0.129	
Monday 17	29.945	42.6	37.6	N.W.	44.3	52.2	32.8	91.9	27.1	—	
Tuesday 18	30.075	42.8	40.1	N.	44.0	55.8	32.8	100.3	28.0	—	
Wednesday 19	30.194	47.1	40.8	S.W.	44.1	60.6	32.9	99.9	28.0	—	
Thursday .. 20	30.121	49.3	44.4	S.W.	45.3	60.3	35.3	99.8	30.0	0.162	
Friday 21	29.930	43.4	41.7	S.E.	46.7	46.9	43.1	56.1	42.2	0.186	
Saturday 22	30.234	43.7	40.1	N.	45.0	50.8	34.2	86.2	29.8	—	
	30.016	44.6	40.9		44.9	54.1	35.8	89.9	31.3	0.477	

REMARKS.

16th.—Overcast, with occasional spots of rain early; sunny at midday; rainy from 3 P.M.
17th.—Fine and generally sunny day; spots of rain in evening.
18th.—Generally sunny, but rather hazy.
19th.—Mild sunny and spring-like day; clear night.
20th.—Bright early; sun visible through thin cloud in morning; cloudy afternoon.
21st.—Incessant rain from 4 A.M. to 4 P.M., and showers later.
22nd.—Fair early; sunny morning; overcast from 3 P.M.
With the exception of the 21st (which was a wretched day) a fine week, but cooler than any of the previous three—G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, MAY 4, 1899.

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BLACKBERRY CULTIVATION.

WHEN shall we see the Blackberry receive its place in gardens generally as worthy to take rank with the Raspberry and other bush fruits? I suppose the correct answer to my query is, When its true value is realised and its cultivation is understood.

It is now nearly twenty years since I planted my first row of that best of all Blackberries, the Parsley-leaved Blackberry, and I yet in a lively remembrance of its marvellous crop, in the third year from planting, of huge clusters of the large glossy fruit, and of the astonishment of everyone who thus saw cultivated Blackberries for the first time. The mere sight of it was sufficient to warrant the prediction of a great future for it, both in private gardens and for market, and this feeling gained force from a knowledge of the ease and certainty of its cultivation.

Yet even now one seldom sees it grown to perfection; if planted at all it is relegated to some out-of-the-way place among trees as an undergrowth, or to form a thicket, anywhere but in the garden among other fruit. The result is total or partial failure, yet a little thought must bring conviction that really fine fruit in abundance could not be so obtained. One might go farther and add that it is owing very much to want of thought and an intelligent grasp of possibilities, perchance also some degree of prejudice, that has hindered the extension of Blackberry cultivation.

A couple of rows of it in one of the Derbyshire County Council's fruit plots have induced much inquiry and discussion. One visitor actually asked how I could waste good land upon such rubbish, adding that the proper place for Blackberries was some out-of-the-way corner. Knowing that something tangible is the best answer to such queries, I have, in the last two years, had fruit plot demonstrations when the Blackberries were ripe. The sight of these two rows, each 20 feet in length, laden with nearly an hundredweight of ripe fruit, has induced something akin to excitement amongst our visitors. This, and one's

No. 2640.—VOL. C., OLD SERIES.

explanation of the few and simple details which go to render success a certainty, is doing good work.

But one has to remember that, however fully cultural details are explained, it is seldom that amateurs grasp the significance of every point; that which is clear enough to the trained gardener is too often vague and indefinite to them. When, where, and how to plant may be remembered; not so the fact that in order to obtain a heavy fruit crop there must be proportionate vigour of growth, and sufficient time for the plants to become well established in their permanent quarters. To impress this upon the minds of beginners there can be nothing like a well-established row in full bearing and full vigour of growth. By full bearing I mean a row of, say, 6 feet in height, laden thickly from bottom to top with fruit clusters from 9 inches to a foot in length; and by full vigour of growth, plenty of shoots 10 or 12 feet in length and nearly an inch in diameter. Such shoots are the growth of one season, not upon old wood, but directly from the stool or crown; they must be kept tied in as growth progresses or the rows will be unapproachable; and though tolerably free growth may be had in poor soils growth of full vigour and a full crop is only possible in fertile land.

Intersecting—not boundary—fences, might be turned to profitable account as supports for this fruit; the form of support is immaterial. An open situation, rich soil, the plants 4 feet apart, if in rows 6 feet between the rows. Cut down to two or three buds in planting. Cut in hard the growth of the first, and, if necessary, the second year. Stout fruiting wood will come freely either in the second or third year, according to the condition of the soil. This is a matter very much in the hands of the cultivator, and I have known more than one instance where feeble growth and small clusters of fruit has led to the Blackberries being uprooted and thrown aside in disgust. When the strong growth comes do not tie it upright to the supports, but rather aslant, so as to induce every lateral bud to break and develop fully its cluster of fruit. After the leaves are fallen in autumn the fruit wood is cut off close down to the stool, and the young wood tied in or regulated for the next year's crop.

I may add that I planted some of this Blackberry last November, and more of it in the present month. Both lots of plants came from the same nursery, those at the beginning of the season being fine examples of sturdy vigour, those at the end of the season being so small and feeble as to be hardly worth planting at all. If this may be taken as an indication that the demand has been so great that the stock was about exhausted, it goes to show that the cultivation of this fruit is receiving more attention than I supposed, and that its value is obtaining the general recognition it deserves.—E. L.

IXORAS.

My first acquaintance with Ixoras was in a lean-to Pine stove, the pots being plunged in the tan bed, and the structure heated by flues. That was in the year 1850, and the plants, mostly *I. coccinea*, were evidently at home. Since that time I have seen many as good in profusion of foliage, denseness of trusses, and brightness of flowers, but they have been the exception rather than the rule. I have often striven to grow Ixoras in stoves equal to those exhibited by Messrs. Baines, Letts, Cypher, and others, but could never approach their superb specimens. I have an idea that these plants require and must have bottom heat if the specimen is to be grown in the most creditable condition. In few places at the present time do stoves contain the old-fashioned fermenting beds, and this I think to be the sole reason that the plants are oftener seen in a fair rather than a splendid form.

The heat from hot-water pipes does not appear so congenial to them as that of fermenting materials, and they are liable to attacks of insects, such as scale, red spider, and sometimes mealy bug. I know some growers insist that plants are not benefited by ammonia in the atmosphere, but I find they thrive better where there is liquid manure in the evaporation troughs than where there is only water. That syringing or sprinkling with soft water induces better health in plants than even soft water, and that growth is always superior where there is a mulch of material constantly evolving ammonia.

I think it advisable to give the foregoing preamble, for anyone attempting to grow Ixoras in an ordinary stove may not have the success with them they desire, especially if the grower desire to compete at shows. The plants can be grown fairly well in the usual stove structures, but unless these can be kept at a high temperature and supplied with plenty of moisture when the plants are growing and preparing for flower, there is little worth growing Ixoras for. When

well grown, they are amongst the handsomest and gorgeous of stove-flowering plants, the foliage itself being by no means unattractive.

PROPAGATION.

Ixoras are readily propagated from cuttings. These should be of the half-ripened shoots—that is, short-jointed and moderately firm, inserted singly in small (2½-inch) pots, in sand over sandy peat, plunged in a close frame with a bottom heat of 80° to 85°, and kept shaded. The single-pot system is better than inserting at the sides of a larger pot and after rooting potting singly, but the plan has sometimes to be adopted in order to cover with a bell-glass. Roots will, as a rule, soon be emitted, when the young plants may be gradually inured to the air of the house, and placed in 5-inch pots.

SOIL.

The most suitable compost is fibrous sandy peat, with a little leaf mould or very old cow manure, about a fifth, and quite a sixth of sharp white sand. This is the old-fashioned compost, and there is not any better, though I have seen good plants grown in equal parts sandy, fibrous loam, and fibrous peat, with pieces of charcoal, broken pots or bricks, and sand. They grow well in fibrous peat. Good drainage is very important, and this should be secured with rough material; indeed, the compost ought to be rough for established plants, potting rather firmly.

TREATMENT.

If the plants placed in 5-inch pots are given plenty of heat and moisture they soon grow, and all the better if the pots are plunged in a bottom heat of 80°, or never more than 90° at the base of the pots. When the heat is from fermenting materials, the young plants succeed and grow freely, and a little shade from bright sunshine in summer time helps them wonderfully. In dull weather, however, and at all other seasons, the plants cannot have too much light. Therefore keep well up to the glass, or at least give ample room so that they may have light equally from above and sideways. Then they will grow sturdily, and naturally form a compact bushy plant with little training.

Some of the species and varieties flower in 5-inch pots, and are among the most effective flowering plants we have. Such plants are particularly fine for decorative purposes, and from lasting a long time in bloom are likely to be kept so long a time in the house as to be of little use afterwards. But even if they have to be thrown away after use in rooms, what is to hinder the keeping up of a stock of plants year by year? A sojourn of a few days in relatively cooler quarters than the plants require does not materially injure them, but care should be taken that the soil does not become soddened with water, as frequently happens with plants placed in vases.

For specimens, whether large or small, the young plants require pinching or pruning. If short-jointed cuttings are used for propagation the plants will mostly grow bushy enough for flowering in 5-inch pots without pinching, but when the young plants have a tendency to spindle they should be stopped when well rooted. It is an excellent plan to stop some, and allow others to grow without, so that they will form a succession. Some growers root cuttings in the spring, selecting young shoots of moderately soft wood, insert singly in small 2½-inch pots, and root in brisk heat in the propagating frame. The plants are given 4-inch pots when rooted, and allowed to grow and flower in them. They are very attractive, and should be grown on a much larger scale for purposes of decoration. If the young plants are needed for bushes, the point of the shoot must be removed when the cuttings are well rooted. The spring-rooted cuttings are supplemented by others inserted in late summer or early autumn, wintering them in the 2½-inch pots, and about the middle of February stopping and placing in 5-inch pots. Some that promise well are not stopped, and those that are not so promising are pinched. Thus there will be a succession in this case also, and with both autumn and spring plants in 4 and 5-inch pots.

The plants intended for growing into specimens should not be allowed to flower as it weakens them. In February, or earlier, they may be cut into shape, it being a good plan to cut back the whole of the shoots to insure an even break, and consequently an expansion of the trusses at one time, if they are allowed to flower, or an even development of growths. It is easy to remove the trusses of bloom early with scissors if the plants are not wanted to bloom. The point for specimens is to prune the plants vigorously in order that they may never get larger than bushes, and may send out lateral shoots enough to lay the foundation of a plant capable of producing ample trusses of bloom. As a consequence of this pruning they yearly generate an augmented supply of side shoots, which soon get so numerous that they hinder the leading ones from flowering finely. Those, then, should be examined, when the buds are on the point of expanding, and all except those which are intended to grow or flower, with such as are to remain for giving verdure and compactness to the plant, should be taken off entirely, more magnificent bunches of bloom would thus be unquestionably secured.—G. ABBEY.

(To be continued.)



CYPRIPEDIUM BELLATULUM HYBRIDS.

CYPRIPEDIUM Venubel, figured on page 315 of your issue of April 20th, is another addition to the list of hybrids in which *C. bellatulum* is one parent. It is astonishing what influence this parent bears on its offspring, as by the woodcut given it is easily seen that *C. Venubel* has a great likeness in form to some of the other crosses effected with this species. Never before have I heard of a *Cypripedium* producing six flowers on one spike, and I assume the spike is a fasciated one. Even then it must be an exception to the rule of *C. bellatulum* hybrids, as not all of them are of an extraordinarily vigorous growth.

Most people, I am sure, will admit that the hybridist has made immense strides in this class. Let us start with *C. Lawrebllum* and *southgatense*, the former a cross between *C. Lawrenceanum* and *C. bellatulum*, and the latter between the last named and the hybrid *C. Harrisianum*, both of which received F.C.C. from the R.H.S. in 1892. Then followed *C. Charles Rickman*, which resulted from *C. bellatulum* and a variety of *C. barbatum*, and was raised by the gardener whose name it bears, and since has been raised in other collections, and received varietal names, such as *Meteore*, *Marchioness of Salisbury*, and *Leysenianum*. It has received under its various names several recognitions, and no doubt each of the seedlings differs in some respect from the others. Another fine cross raised at Burford is *C. conco-Lawre*, which is a cross well expressed by its name. Then we have *C. Annie Measures*, a cross between *C. bellatulum* and *C. Dayanum*. *C. Arnoldæ* was shown by Messrs. F. Sander & Co. in the same year (1894), and both received F.C.C.

In the year following several very fine plants were first shown in which this species was a parent. First we have *C. Mrs. F. Hardy*, a cross with *superbiens*, which received an award of merit; and then *Gertrude Hollington*, a cross with *C. ciliolare*, which received the F.C.C. *C. Olenus* was first shown in 1895, and of which perhaps it may be said, this cross, the reverse of *C. Gertrude Hollington*, has produced the finest hybrid *Cypripedium* in cultivation, which was shown at the last Temple Show as *C. Olenus*, Burford variety; it received a F.C.C. on April 10th, 1898.

C. James Buckingham, a cross with a hybrid (*C. enfieldense*), raised in the collection of W. Hollington, Esq., of Enfield, received an A.M. in 1896. *C. Schofieldianum* followed, and is a cross with *C. hirsutissimum*, and received an A.M. in the same year. *C. Madeline* raised in the same collection as *C. Charles Rickman*, resulted from a cross with *C. Argus*, and also received an A.M. 1895. *C. Chapmani magnificum*, a cross with *C. Curtisi*, received a F.C.C., as did *C. conco-bellatulum*, which, as its name implies, is a cross with *C. concolor*. *C. bellatulo-vexillarium* received an A.M. when shown by Mrs. Briggs Bury of Accrington.

There are other existing hybrids raised from this species—namely, the lovely *C. Paris*, which is a cross with *C. Stonei*, *C. Meauriæ*, *C. William Lloyd* (fig. 81), which has a hybrid for a parent in *C. Swanianum*; then there is *C. Godefroyæ bellatulum*, shown by myself at the last Yorkshire Gala. It will be seen that the list of these interesting crosses is getting rather lengthy, but it is to be expected that, good as they are, there are even more beautiful ones to be flowered yet.

As is only to be expected with such crosses, they are extremely variable in growth, some being much more vigorous than others. All with which I have had to deal succeed in a warm *Cypripedium* house, elevated in one corner to themselves, potted in one part good fibrous peat and one part good yellow loam, mixed with some finely broken potsherds and a little living sphagnum moss. When they require moisture they are carefully dipped in a bucket of chilled soft water, taking care that water does not run into the base of the leaves, which is apt to cause decay, and for this reason they are never sprinkled. In the winter months they require small quantities of water, and none should be given unless the grower is quite satisfied that it is necessary. These and the *Cypripedium niveum* hybrids, which I may speak of at some future date, in my estimation, comprise the most beautiful of all *Cypripediums*.—J. BARKER, *Hessle*.

LÆLIA PURPURATA VERSICOLOR.

THIS is one of the finest of the *purpurata* varieties, the deep markings upon the petals giving it a very distinct and handsome appearance. It is greatly superior to such as *L. p. Ashworthiana*, in which the lip seems to be repeated in the petals. This beautiful variety seems also to be extremely free in growth, the owner of the original plant having taken several fine pieces off it, yet he tells me it is

breaking strongly again from the back buds this season, a fact that does not point to the ill effects of division.

EPIDENDRUM VARICOSUM.

This is a dwarf growing plant of rather peculiar habit, the pseudobulb lengthening out into a leafy stem, and producing erect spikes of flowers, these being small and of peculiar colour. The sepals and petals are brownish, lip white with rose purple spot, and the blossoms last well in good condition. A native of large tracts of country in Central America, *E. varicosum* is not a fastidious plant as to temperature, but does best in a light position at the cool end of the *Cattleya* house, potted in a rough mixture of peat fibre and moss. The plant is one of those that have received several names from different botanists, the variation in the colour of the lip doubtless accounting for much of the confusion which has occurred. It was first discovered by Mr. G. Ure Skinner in Guatemala, and probably sent by him to Mr. Bateman.

CATTLEYA CITRINA.

The delicate perfume of this Orchid, and the fact of the colour being very unusual in the genus, gives it quite a unique position. Its habit

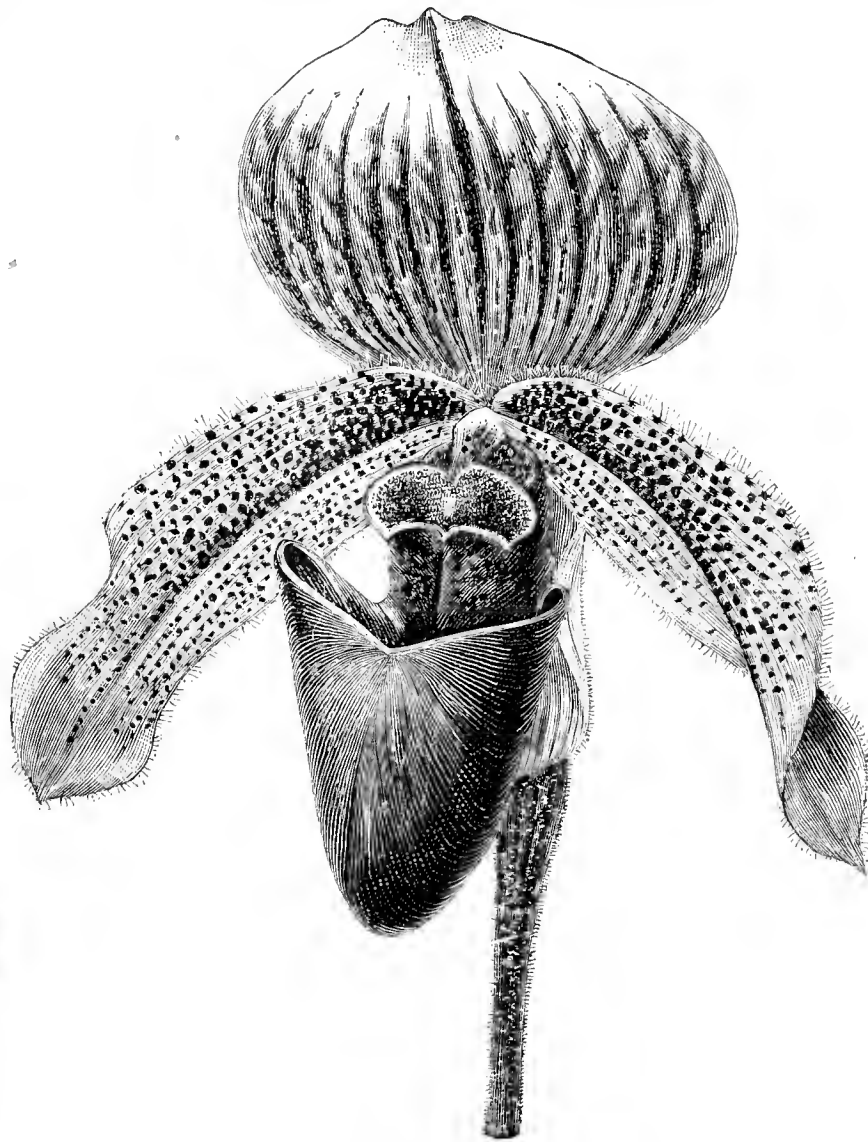


FIG. 81.—CYPRIPEDIUM WILLIAM LLOYD.

of growing head downwards, too, is peculiar, and altogether it is one of the most distinct Orchids in cultivation. It is not everywhere a success, and most growers are under the necessity of purchasing newly imported plants occasionally to keep up a stock of it. It is most likely to succeed if wired to blocks of cork or rafts lightly dressed with sphagnum moss. Probably most of our Orchid readers have tried it in some way or other, and any who have been at all successful over a lengthened series of years, would render a service to others by recording their experience with it. Any note on the times of growth and rest, as observed under various conditions, would be exceptionally interesting, and also instructive to those who are trying to grow it with only moderate success.

MASDEVALLIA TRIARISTELLA.

This is one of the most beautiful of that charming section of the genus, comprising many lovely little gems—not at all showy, but by their marvellous structure and dainty beauty very interesting to those who find a place for other than showy Orchids. The plant is only about 3 inches high, the flower stems almost invisible, and each bearing a little brownish crimson and yellow flower, of so complicated a structure that a description of it conveys no idea to the lay mind of what it is really like.

The culture of this section requires a considerable amount of care, but there is no particular difficulty to be got over; all depends upon timely and judicious attention to the various small details. In the

first place, it is a native of purely alpine regions, where ample light is always present, and where the conditions do not vary so much winter and summer as in Britain. Thus in summer it is difficult, even by heavy shading, to keep them cool enough; in winter our dull sunless days are very distasteful, and we have to do the best possible by keeping the glass quite clean, and the plants well up to it. The usual Orchid compost of peat and moss suits it well, but obviously only a little is necessary for such small growing plants, the roots of which never push far from the centre of growth.—H. R. R.

THE STRAWBERRY.

FEW garden plants have been more improved by cross-breeding, selection, and by the application of suitable manures, than the Strawberry. It is probable also that more money may be made by the growth of Strawberries in the open air of this country than by any other kind of fruit. As much as £20 per acre profit has frequently been obtained, and when the best varieties have been cultivated, it is no exaggeration to say that an acre of this fruit will realise as much as £100. The forcing of Strawberries under glass has also within the past few years opened out an almost new, and certainly a profitable industry. The quantity of Strawberry fruit obtained per acre varies enormously, ranging from 75 bushels to 300 bushels, or possibly even more. This, however, will depend largely on the variety grown, and the treatment the plants receive. As no plant will repay careful culture more than the Strawberry, so, on the other hand, few plants deteriorate so quickly if they are neglected or improperly manured.

FOOD REQUIREMENTS OF THE STRAWBERRY.

In order to understand something of the food requirements of the Strawberry, it is desirable to study the chemical constituents of these plants, and the fruit they produce.

An acre of Strawberry plants of full growth, taken without the underground roots, would probably weigh about 8 tons. Of this 8 tons, about 6 tons would consist of water and 2 tons of dry substance.

A good yield of fruit would probably weigh 10,000 lbs. per acre; this quantity, owing to its succulence, would yield only half a ton of dry substance, the remainder being water.

To produce these amounts of dry substance in the Strawberry plants and in the fruit it is necessary that there be taken up from each acre of land during growth and development, say approximately, nitrogen 105 lbs., potash 110 lbs., lime 112 lbs., magnesia 17 lbs., phosphoric acid 41 lbs., silica 50 lbs., and soda 8 lbs. Other chemical elements will be imbibed also, but these latter we need not take into account, as they are usually provided in sufficient quantity by fertile soils.

As there will be five times more nitrogen taken up by the growth of an acre of Strawberry plants than there will be by an average yield of Strawberry fruit, it follows that in order to secure a full crop of fruit the plants must be brought into a vigorous and sturdy habit of growth for the purpose of assimilating the necessary quantity of carbon from the atmosphere for the building up of the fruit tissues, which has to be done very rapidly, as the fruiting period of the Strawberry is of short duration. Consequently large demands will be made upon the soil for immediately available forms of plant food, especially of the three elements—nitrogen, potash, and phosphoric acid. This is shown by the fact that 100 lbs. of the ashes of Strawberry plants will contain 26 lbs. of potash, 6 lbs. of phosphoric acid, and 1 lb. of soda; while 100 lbs. of the ashes of Strawberry fruit will contain from 40 to 50 lbs. of potash, from 14 to 16 lbs. of phosphoric acid, and from 8 to 10 lbs. of soda.

THE MANURING OF STRAWBERRIES.

A soil to be in a suitable condition for Strawberry culture as regards fertility, must contain a large excess of available plant food over and above the amount that can be utilised by the immediately growing crop, since it cannot be supposed that the roots will be able to absorb, by virtue of their disposition in the soil, more than a comparatively small proportion of the applied fertilising ingredients.

The old adage for Strawberry culture, "the more manure the larger the crop," may hold good on poor, hungry soils, but on sound rich loams, rank forcing manures, whether natural or artificial, should be employed with caution. If farmyard manure and rich vegetable compost are used in excess, or a large quantity of strong nitrogenous manures, such as nitrate of soda, or sulphate of ammonia, then abundance of leaves and vigorous runners rather than fruit will be the result.

A moderate dressing of farmyard manure thoroughly incorporated with the soil during the winter is doubtless a capital preparation for Strawberry culture, as this will keep the soil open, porous, and moisture-sustaining. But as the richest soils, even when assisted with farmyard manure, contain only small amounts of readily assimilable plant food, it follows that judicious applications of soluble

artificial manures may largely aid fruit production if these are applied in early spring before active growth has commenced.

Let old dead leaves and runners be removed from the plants and the ground cleared of weeds, then apply between the rows, not later than February, a dressing of soot, superphosphate, and potash salt in equal proportions, say from 3 to 6 cwt. per acre. This will be found to retard injurious effects from slugs, as well as feeding the plants, causing them to develop a sturdy, robust habit of growth, which is the best foundation for securing a full yield of the finest fruit.

FEEDING STRAWBERRIES IN POTS.

In the pot culture of Strawberries the plants are necessarily cramped in their root development, and, therefore, require special care in feeding. The benefit of good liquid manure when the fruit is setting becomes apparent. A solution containing half an ounce of superphosphate, half an ounce of potash salt, and quarter of an ounce of nitrate of soda to each gallon of water may be used. This manure must not be applied over the leaves and blooms.

A good liquid manure can be made by suspending a canvas bag containing sheep droppings and soot in a tank of water a few days before being required for use.—J. J. WILLIS, *Harpenden*.

PINCHING FRUIT TREES.

ON page 317, April 20th, Mr. Geo. Picker asks a pertinent question which growers will do well to carefully consider, though perhaps few will entirely agree with him. The practice of summer pinching fruit trees is a good one under certain circumstances, but I fear we are all too much inclined to carry it out in cases when there is really no occasion to do so.

My opinion is that summer pinching was first practised principally with the object of obtaining fruitful wood close to the main branches of trained trees, rather than in the belief that the wood would be brought into a fruitful condition earlier than by non-pinching. In the case of trained trees on walls or espaliers pinching is a necessity, in order to secure a well shaped tree and to keep the spurs near the main branches, but when such trees have been closely pinched for years improved results are obtained by removing alternate branches and laying in young shoots thinly wherever room can be found for them. In my view a good crop of fruit is of far more consequence than the precise training of branches.

Now let us turn to the consideration of bush and pyramidal trees. In their case I fail to see the slightest necessity for pinching, beyond that required to prevent shoots from becoming crowded, or checking the vigour of a "robber," except in the case of a cultivator who desires to grow as many varieties as possible in a limited space. By the aid of summer pinching and root-pruning this object is best accomplished, because unstopped trees require more room than closely pinched ones. This is indeed a vital point in connection with the matter. When asked for information on pruning generally, the advice I invariably give, Allow each tree plenty of space, and when a sufficient number of branches have been secured to lay the foundation of a well balanced tree, simply thin the shoots in summer to allow sun and air to act upon every leaf.

In regard to the point, Will pinching produce fruit buds on the current year's growth capable of producing large, healthy flowers? I say yes, in some instances, but only in case of varieties which make their growth early; with the majority of Apples and Pears two seasons elapse after pinching before fruit buds are formed.—H. DUNKIN.

MR. GEO. PICKER gives the Journal readers a question to answer on page 317, bearing on the influence of pinching of the summer growth in fruit trees. His opinion is that, to satisfactorily answer the question, a dozen Apple or Pear trees in variety, worked on the same kind of stock, should be planted with their roots near the surface, and in ground well prepared. This course would prove whether pinching would benefit the sorts under treatment; but it would not satisfactorily give a precedent for other varieties, because it has been proved so often that varieties differ materially in their fruit-bearing characters. A tree of a shy bearing Apple or Pear would not respond to any appreciable extent to the influence of pinching, and if the tree happened to be a vigorous one, pinching would result in lateral growth rather than the formation of fruit buds.

Pinching is useful in the case of trees that are unequal in strength of branch, by temporarily diverting the sap into the channels of those that are weaker. Except in such cases I do not think any material benefit would follow the general adoption of pinching of the summer growth of Pears and Apples. Vigorous trees, whether young or older established, after being subject to years of hard pruning, will often, if the lateral growths be thinned and the stronger ones left unshortened, change from barren into fruitful trees in a surprisingly short space of time. This I do not think would follow pinching.

Thinning of the weak and crowded lateral spray, so as to let the sun play on the stronger shoots to ripen them, will not only prove to be a less laborious undertaking, but result in fruitful branches. By this method the character of trees is changed. The only objection that can be taken to it is the branches, when roped with fruit, require to be supported, or they are dragged out of their natural position and form what are known as "sprawling" trees.

Mr. Picker is quite right in saying that many varieties will produce fruit buds on the current year's growth, when their roots are in good condition, without any stopping, but this happens with free bearing sorts, or those of greater age, that have been subjected to radical changes in the method of pruning. One has only to plant an equal number of Blenheim Pippin and Lane's Prince Albert Apples to prove the vastly divergent characters of the two. The last named will commence to fruit within two years of being planted, and continue to do so, provided the weather is right at the flowering time, while at the same time pinching of the summer growth will never make a Blenheim produce similar results from a young tree, no matter how expert a man might be in its manipulation, simply because its nature is opposed to early bearing.—W. S., *Wills*.

WHAT is the advantage of pinching fruit trees during their growing season if a greater weight of fruit can be obtained without? I have been deeply interested in fruit culture for many years. Our soil is very heavy, and if the Apple trees are left to take their chance, although carefully planted on land that is well drained, the foliage soon has a yellow unhealthy appearance, and the trees canker and die. These, I may say, were chiefly on the Crab stock.

A few years ago we determined to try experiments with other stocks. Messrs. Veitch recommended the broad-leaved Paradise stock; Mr. Rivers thought his Nonesuch stock would suit our land. We therefore tried both, and they have been an unqualified success. Two-year-old bushes were obtained; these were cut hard back when planted, and grew at a rapid rate the first season. The following autumn they were root-pruned; the shoots were thinned, and those remaining were slightly shortened back. The following summer all the varieties carried a heavy crop of fruit. These were thinned so as not to exhaust the trees. As a proof of the fine fruit they bore I may mention the fact that one fruit of Bramley's Seedling turned the scale at 23 ozs. Summer pinching has not been practised, neither has it been necessary to root-prune the trees since the second year.

The trees have cropped heavily each year since; last season, owing to the fine autumn, we had the heaviest crop of well coloured fruit we have ever grown. The trees have stakes placed round them to support the branches, otherwise they would break off owing to the weight of fruit. If such heavy crops of fruit can be grown without summer pinching, why carry out the operation?

The varieties comprise the following:—Lord Grosvenor, Bismarck, Lane's Prince Albert, Potts' Seedling, Stirling Castle, Bramley's Seedling, and Cox's Orange Pippin.—S., *Yorks*.

THE pinching of fruit tree shoots in my opinion is productive of fruit only in a secondary way. As a rule spurs, and therefore shoots, are so thickly placed on espalier, cordon and other trees, that, without pinching light and air cannot reach the basal leaves. If these individual shoots were thinly placed, as they are upon open free-trained trees and the leads of espaliers, all would form fruit buds, and eventually fruit spurs, without any pinching. It is the artificial method of training and pruning that makes pinching necessary, and I consider it is really necessary with vast numbers of fruit trees and bushes.

When growers wake up to the importance of disbudding their Apples and Pears, thereby keeping the shoots far thinner than they are kept at present, there will be less need of pinching; and in this connection it may be well to add, that in numberless cases that have come under my observation pinching has been productive of evil. In the first place the shoots are pinched too early, before the leaves are properly developed, and afterwards the lateral shoots that result from the pinching are allowed to grow into a thick mass, thereby excluding the light and air, and defeating the very end in view.

To be effective the pinching should go on as long as there is any fear of growth starting, taking each lateral at the second or third leaf, and as these have no direct bearing upon the spurs and wood that is to be retained, they may be pinched when quite soft, or when the leaves are half grown. Then, as Mr. Molynaux has pointed out, the trees may be pruned early, and the morning sun in autumn will reach every one of the principal leaves.

On this, in my opinion, the whole question turns. Anything that hinders the full development of the principal leaves—as early pinching undoubtedly does—or keeps the light from them, as under present system the let alone principle would do, is productive of harm. A well thought out system on the other hand of pinching at the right time when necessary, thinning, and allowing a little freedom where circumstances allow, will insure fruitful trees.—H. R. RICHARDS.

POTATO AND OTHER TRIALS IN SURREY.

I HAVE just completed the planting of the usual Potato trials on the four plots placed at the disposal of the Surrey County Council by various local bodies for the testing of the merits of some of the best varieties of vegetables. All these plots are in conjunction with large groups of allotments, and it is found that the growing of divers kinds and varieties of vegetables under such conditions, all being duly labelled very legibly, furnishes much more of interest in the county than can result when the trials take place in a central ground that may be difficult of access to those persons most immediately concerned.

Besides Potatoes, grown on all four plots, a fine selection of the best dwarf and 3 feet Peas have been sown on two, and on the other two there will be trials of about twelve of the very best Dwarf Kidney Beans obtainable, including some not yet in commerce, and also of Beets, including the best stocks procurable. These are all products which create great interest in allotment holders' minds, and to be able to see them growing and cropping under the best methods of culture that can be furnished renders the trials of exceeding value.

The earliest planting of Potatoes was at Richmond on April 14th. Here were planted on one-half the plot two rows each of comparatively early varieties. Duke of York, White Beauty of Hebron, Webber's White Beauty, Early Puritan, Pride of Tonbridge, The Rover, Beauty of Hebron, Sutton's Supreme, Lye's Victory, International, Devonian, Early Regent, Challenge, and Sutton's Reliance. All these should be ready to lift early in August. The Richmond soil is very early, and also light and porous. The allotment holders plant their Potatoes much sooner than April 14th, as very late ones suffer in hot dry weather.

A plot of 20 rods on the Surbiton group, whilst the soil is rather more retentive, it is yet somewhat sandy; but the position is colder, and generally crops are a fortnight later than at Richmond. Here were planted on April 15th single rows of generally stronger growers in Potatoes, including Syon House Prolific, Challenge, International, Teneriffe Kidney from imported tubers purchased to test against the Canary Islands, Ivo which obtained an award of merit at Chiswick. Devonian, also another A.M. variety; Pride of Tonbridge, early and a fine cropper; Sutton's Reliance, also a great cropper; Prime Minister, Chancellor, Conference, The Dean, these latter four of my own raising at Bedford; the famous Up-to-Date, Loveland's Kidney, a variety of great table excellence; Windsor Castle, Satisfaction, Renown, Quantity and Quality, Carter's Snowball, and Ellen Terry. This list comprises a very fine maincrop selection, and some of the best varieties in commerce. Besides these, are now growing fourteen rows of 3 feet Peas, a first-class selection that it would be hard to excel amongst midseason and late varieties. Kidney Beans and Beets will follow.

At Englefield Green, on what may be described as pure dark sand, all the ground has been by special request planted with Potatoes, including many varieties not known in the locality. In this case broad furrows were opened with a spade in the sand 30 inches apart, and native guano tried for the first time here. For this purpose two rows of fifteen varieties of Potatoes were planted, the first row in each case having a dressing of the guano, at the rate of about 12 lbs. per rod, the other row being undressed. The ground had no other form of dressing given it. It will be interesting to see later what may be the effect. Judging by the perfume emitted, the manure is rich in ammonia.

The other plot is in a very open, exposed, wind-swept field at Great Bookham; the base being chalk, and the soil rather poor. Here one half of a plot of 25 rods has been sown with Peas, and the other half planted with Potatoes. In this case varieties have been chosen as suitable for the production of seed tubers for the hundreds of continuation school gardens in the country. This plot also adjoins a large group of allotments.

Dwarf Beans and Beets will be sown about the second week in May, as that is quite soon enough for exposed aspects. The Beets include the Sutton Globe, Sutton's stocks of Del's Crimson, Blood Red, Cheltenham Greentop, and Nutting's Dwarf Red, also Dropmore Selected, Pragnell's Exhibition, Webb's Satisfaction, Carter's St. Osyth, and Perfection, and one or two others sufficient to secure a very useful trial, as all are of the best stocks. In the manner above indicated a goodly number of selected varieties of useful vegetables are brought under the notice of hundreds of workers who watch their growth from beginning to end. Thus the very class of men who most need it obtain information in the quickest and most practical manner possible, also of the exact kind that is of the greatest service to them, and are not slow in turning it to useful account. They learn far more in a season or two from these simple object lessons than they could learn in ten years from the reading of elaborate reports.—A. D.

BEAUTY IN NATURE AND ART.

DAFFODILS waving in the west wind—Daffodils galore. Lusty Sir Watkins, noble Emperors, fair Empresses gave a right royal greeting as we trundled our wheel up to the garden home. Three and twenty miles in the teeth of the same west wind accounted for over three of those precious hours, which mean so much in a day at Straffan. But as the most toilsome journey oft brings the most pleasing retrospect, so perhaps one enjoys the more the quiet delights of this picturesque place. There was nothing prettier seen than a broad patch of the old English Daffodil, *N. pseudo-Narcissus*, studding a portion of the lawn; but large quantities of the elegant princeps made a brave display in a similar position. The latter have seeded freely, and numerous progeny surround patches of the parent plants. Occasionally a bunch of rush-like stems show where the seed pod has burst without scattering. This is naturalisation pure and simple, and intensely satisfying to those who love the "Lilies of Lent."

It is worth remarking that only on the grass has the production of seedlings been in evidence. Probably this part of the lawn being mossy forms a congenial bed for germination. Sir Watkin is boldly assertive, the produce of nine bulbs, originally, being numbered by thousands, or appeared to be so. These are offsets, obtained in the planting and replanting of the beds, which have long since escaped the bonds of orthodoxy, and grow and blow at their own sweet will on the grass. Would that stately maximus were as prolific. We see a dozen or so of its deep golden blooms among the peculiarly narrow twisted foliage; the one here is the fine form known as the College Garden maximus. On the far bank of the Liffey Daffodils brighten the scene, and some have crossed the frontiers into the pastures beyond, where they are scrupulously avoided by the grazing stock.

By a suspension bridge "The Island" is reached, and here freedom reigns. Graceful Bamboos bend to the breeze, and are well represented by such kinds as *nitida*, *nigra*, *viridis-glaucescens*, *palmata*, and *japonica* (Metake), all being pictures of health and happiness. The position as regards soil is a moist one, and Mr. Bedford says that on higher and drier ground they never did well. Leaf mould, with a liberal allowance of sharp sand, is the medium they revel in. An infant *Gunnera manicata* is pushing its way like a young Hercules through the protective covering of last year's foliage, and it is notable that beyond affording some compost to the choicer plants when introduced to the Island, Nature is, practically, allowed to have her fling; hence there is no tidying up or trimming down of dead leaves and withered stems. Down the reaches of the river red Willows are very fine, but, strange to say, the golden one does not succeed at Straffan.

Reluctantly leaving the Island for a turn through the kitchen garden, a youthful Bedford in knickerbockers is seen violently gesticulating at the end of a long walk. The wireless telegraphy spells out D.I.N.N.E.R, for which inestimable benefit to hungry horticulturists one, at least, would, if he could, make "The Missus" a V.M.H. on the spot. There is no more interesting thing in Straffan than the low wall in front of Mr. Bedford's house. It was a happy thought of the Bedford boys when they decked it with Alpines. It has been noticed before, but never did it appear so much a thing of beauty and interest as it did to-day.

In the greenhouse, chiefly devoted to plants in bloom, there is "nothing to see." The "nothing" consists of as bright and varied a show of bloom as the house will hold, including a number of superb examples of the old Machel Mignonette. From the roof of a warmer house hang pendant panicles of the quaintly pretty *Hexacentris mysorensis*. The orangery holds some noble trees in fruit and blossom, and some coveted Kentias enjoy the subdued light, flourishing in such small pots as are dear to the heart of the decorator. Orchids are, as they always are, well to the front at Straffan. The famous *Wardianums* are on the wane, but still beautiful; one deep tinted variety is very conspicuous.

With all that is rich and rare under glass, however, the outside appears to have especial attractions to-day. The improving hand is so much in evidence over a score of years, and we would fain do likewise in our own sphere of operations recently migrated to. In a sheltered glade is a collection of Japanese Maples, cunningly contrived to catch the eye as one passes them, on a shrubby walk at right angles. A good effect is created in some beds of herbaceous *Pæonies* by clumps of Daffodils informally disposed through them; the purple-red springing foliage of the one, and the golden blooms of the other, being almost daring in its tone amid the faintly discernible greenery of tree and bush; and what an aggressive thing is the hybrid Briar, *Anne of Gierstein*! Up some barely visible support it has climbed fully 15 feet, and must when in bloom be a pillar of beauty.

But the day declines and our "wheel" awaits; the miles are many, and thorns lurk by the wayside. It is, however, an easy run back, for the wheel and the river are both making for the sea, until the Phoenix Park is reached, where there is no choice but to join a long procession of jaunting cars returning from Fairyhouse races. Poor fairies! how those jaunty jarvies rattle their bones over the stones as we descend

into dear, dusty Dublin! Through the city, out on the Rock Road, no rocks ahead now save a limb of the law who looks suspiciously as we dismount staggering with stiffness, but braced with pleasant memories of Straffan.—K., *Dublin*.

P.S.—Some Irish notes recently intimated that changes might occur at Straffan consequent on the death of its honoured master. Such is the case, and the Hon. Mrs. Barton, whose devotion to gardening has so widely developed its beauty and interest, is about to reside at Luttrellstown Castle, fortunately within touch of her old home, whilst Mr. Bedford remains on the scene of those labours of love which have been unremittingly carried on by him for over twenty-three years.—K.

EXPERIMENTAL HORTICULTURE.—3.

ESTABLISHING EXPERIMENTAL STATIONS.

FROM what has already been said it will be judged that there is ample room for the foundation of experimental gardens and stations. The more they can be increased in numbers, especially if they be established on anything like a uniform system, the greater the gain to cultivation and the nation. Experimental work, as regards plant life and horticulture, may be summarised under three heads.

1, Scientific research. This would deal with the more abstruse problems of plant life, structural and physiological variations affected by different treatment, the causes of varying manurial actions in different soils, and all the laboratory work concerned in the analysis of soils and products.

2, Practical work. Directed to the elucidation or improvement of ordinary horticultural operations. This series should also include experiments intended to advance the cultivator's knowledge of manures, and their most profitable applications. The important matters of insect destruction, and disease prevention or cure, would likewise demand attention.

3, Commercial aspects. Under this head the experimentalist would be concerned in the endeavour to—A, Economise the cost of production; B, Increase the productiveness of land; C, Improve the plants grown.

A complete experimental station should include the three series of investigations, but where that is not possible valuable work can be done in either of the others provided it be commenced and carried out on a carefully considered plan. Instances are known to me where from defects in the original design or in the subsequent execution, years of labour and great expense have been rendered comparatively useless. When there are so few attempts at research this is especially deplorable, because it serves to deter others, and throws an unmerited odium upon scientific work. The essential points to be determined at starting are:—

- 1, The objects of research.
- 2, A systematic plan of work.
- 3, The method of recording.

These are mutually dependant, and a defect in either will very seriously affect the final value of the work. Without a definite object in view it is impossible to form a satisfactory plan; in the absence of a judiciously organised system the best work will be of little avail; and, lastly, failing an accurate and well-devised method of recording results, the whole becomes profitless, disappointing, and even misleading.

These preliminaries being settled, the next considerations are the conditions under which the experiments are to be conducted. If it is intended to deal with cultivation in the open, the selection of land becomes a matter of the first importance. The site should be preferably one that is not unduly exposed to extremes of temperature, wind, or rainfall. The soil of the area to be cultivated should be as nearly equal in character as possible, and beyond this it is desirable to have some knowledge of previous treatment and cropping, especially when this has varied in different parts of the selected land, as it may often throw a light on the seemingly erratic behaviour of subsequent crops. In most cases an equalising influence is exerted by placing the whole of the land under one kind of crop previous to commencing experimental work. Rough or foul land may be planted with Potatoes as a good preparation, provided the soil be not deficient in potash, and a suitable dressing of artificial manure be applied, the exact composition of which is known. If the land be poor in nitrogen a crop of some leguminous plant could be sown and turned in.

Samples of the soil for analysis should be taken from different depths, and where the land appears to vary in character it may be necessary to select several spots in the same field. At most first-class stations it is usual to take samples of the soil at three depths, the first, second, and third 9 inches, the total depth thus tested being 27 inches. For the majority of crops with which horticulturists are concerned this is sufficient.

Apart from the cropping already mentioned, the actual mechanical preparation of the soil is a matter of some moment. For farm crops ploughing is always adopted, but for horticultural work digging or

trenching is needed, and this becomes an expensive item. At the Woburn Fruit Farm the whole of the land was trenched, and the greater part was forked afterwards, this being rendered necessary by the abundance of "twitch" and other weeds. Such a treatment is beneficial and desirable, but on heavy soil it entails a preliminary cost of over £20 per acre—an example of the expense attendant upon thoroughly organised experimental work.

It is of great importance to also have a set of meteorological instruments, and to keep continuous records of temperature and rainfall. A valuable instrument in connection with these observations is a sunshine recorder, as the actual amount of sunshine to which vegetation may be exposed has a material influence on the behaviour of plants. Besides the ordinary instruments in the cases at the regulation height above the ground, it is also needful to have radiation thermometers on the ground, and exposed to the sun, so that the extremes of temperature may be registered, while a thermometer in the soil will often furnish interesting data.

The general regulations of the work will depend upon its nature and objects, but a few points are worth keeping in mind, because they are applicable to both large and small undertakings. All operations where comparisons are to be instituted between the crops should be performed as nearly as possible at the same time, and under similar conditions as regards temperature and moisture. This applies to soil preparations, planting, seed sowing, and taking the crops for records.

Where artificial or natural manures are employed it is desirable to continue the application of one kind to the same plot of land over as long a period as possible, as the introduction of fresh compounds when there may be much of that previously employed already in the soil may lead to very conflicting results. Where trials of manures are conducted upon neighbouring plots, as it is important they should be, it is necessary to have a clear space between the adjoining plots, as the more soluble manures are readily diffused through the soil, and would thus militate against the accuracy of the results.

As large a number of plants of one kind should be subjected to the same experimental treatment as possible; the risk of error is reduced in proportion, and the value of the records increased. Very misleading opinions may be formed from observations confined to a small number of individuals.

There are many other matters apparently small which demand attention in experimental work, but these are some of the chief, and I have referred to them because throughout their careers horticulturists are essentially experimentalists in some degree. They are usually men whose powers of observation have been developed by the very nature of their calling. It is seldom, however, that the funds at their disposal or the demands for the results of their skill and labour will permit systematic research; consequently their observations are not often recorded, unless it be in the pages of the horticultural press, or they remain in their own notebooks, where they may prove of value to the owner for future reference, but are lost to the great body of workers. All the same, horticulturists should use notebooks freely, constantly, and systematically; every man, whether beginning or advanced in his occupation, would do well to review each day's work and difficulties, and place on record his impressions or observations for future reference. It is important, however, not only to note results, but to accurately record the conditions under which they have been obtained. Much judgment and close attention are needed in this to avoid erroneous conclusions. A mind that is peculiarly free from bias or prejudice is essential in recording experimental results, and the ignoring or exaggeration of apparently slight details will seriously influence the conclusions. Truth should be the sole object of the experimenter, even though it be contrary to preconceived ideas.—R. LEWIS CASTLE.

AUTUMN-SOWN PEAS.

THE practice of sowing Peas in autumn is not nearly so often carried out as formerly; indeed it is only occasionally that one finds cases where it is done at all. The greater accommodation afforded by pits, heated or cold, which cheap glass furnish in the present day, does away to a large extent with the necessity and risk of autumn sowing.

Last autumn I made a sowing on a sheltered border as a chance or probable catch crop, and for a time everything went well with the plants, and to some visitors unaccustomed to find thriving Pea rows in winter they proved interesting, and raised many speculations as to the ultimate result. The severe spell of wintry weather that followed the abnormally mild and wet period proved too much for them, notwithstanding that they were protected at night with evergreen boughs. Those which escaped fatal injury from the January frost succumbed to that in March, and the ground is now occupied with another crop.

The total collapse of the autumn sowing is attributable mainly to the sodden condition of the soil at the time of the cold frost spell, and the soft nature of their growth as a consequence. Those who cannot devote glass space to the raising of Peas in boxes need not abandon autumn sowing because of their failure this spring, for with better weather results would be more favourable.—W.

A CACTUS HUNT IN MOUNTAIN AND DESERT.

AT the last bi-monthly meeting of the spring session of the Birmingham Gardeners' Association, Mr. F. A. Walton, Handsworth Wood, Birmingham, made the above the title of an excellent discourse. The lecturer is a large importer of Cacti and other succulent plants, and his extensive collection of Cacti at the "Chrysanthemum Show" last year in Bingley Hall attracted much attention. Mr. Walton has recently returned from America after a three months tour. The subject was illustrated by a series of photographs representing Cacti and other succulents growing in their native habitat.

The description of his travels and adventures in collecting Cacti in California, Texas, and Mexico, was delivered in a lucid, interesting, and humorous manner. He remarked that one of the peculiarities of the Cactus family is that few species, or even varieties, are found in any one neighbourhood, therefore it is necessary to travel over great distances to see any considerable assortment.

Knowing this, and wishing to see and study as many kinds of Californian Cacti as possible, he made arrangements with Dr. C. A. Purpus (who was staying at San Diego, California) to join him upon a botanical expedition across the mountains and down to the Colorado desert. The start was made from San Diego one foggy February morning at 8.30 A.M. in a miniature train, consisting of an engine, one truck, and one carriage, by the Cuymaca line (pronounced Queermacker), passing through some fine fruit growing country, the track winding about considerably so as to avoid heavy gradients, then passing over a ridge some 800 feet high, again going down into the El Cajon valley (pronounced Elkahoon), which is practically a frostless district, where Oranges, Lemons, and Grapes grow to perfection. After a time the sun shone through the fog, and everything looked splendidly bright and clear, with a pleasant breeze that prevented oppressive heat. The hills all round were some 3000 feet high, and the valley, which is about 500 feet above sea level, is splendidly sheltered from all rough winds. The train passed along very slowly, calling at a number of small stations for fruit, or to return packages from San Diego, the market of this district. The hills terminate at "Foster," about twenty miles from San Diego. Foster is the one man there. He keeps the hotel, is station master, runs the stage coach, or rather carriage, which was waiting for the arrival of the train, to take the passengers to their destination.

Directly after leaving "Foster's" the road became very rugged and steep. They had for some time passed beside the San Diego river, which, said the lecturer, should have been called the Sandy river, as there was no water visible, and after crossing they entered a magnificent cañon (all narrow valleys are called cañons in California). The road was sometimes cut into the rocky sides of the mountain, at others it was near the river bed, and sometimes hundreds of feet up the cliff, where a false step of one of the mules, or a bump over an extra large stone, looked as if it would precipitate us into the rocks below. This kind of scenery continued for about seven miles, where they emerged on a splendidly breezy plain or tableland, of about 1600 feet elevation. After passing across about five miles of this, they arrived at Ramond, the place he had agreed to meet Dr. Purpus.

The only Cacti he had seen so far were *Opuntia tuna*, *O. Engelmanni*, in several varieties, *O. prolifera* and *O. serpentina*, none of which were at all remarkable. Next morning at eight o'clock Dr. Purpus arrived, with a strong spring waggon and team of two strong mules. The driver, Mr. Alfred Stockton, a young Californian, had made several botanical excursions with Mr. T. S. Baudesee of San Diego, and Professor Anthony, two of the most noted explorers and botanists in the State of California. The waggon was filled with provisions for themselves and the mules, enough to last a considerable time. After crossing several fine valleys, each at a greater elevation than the last, they at length reached Julian, and where even at the level of 5000 feet they found several varieties of *Opuntias*, although they say that they have frost every month of the year—and the snow was quite thick upon the ground in places.

Leaving Julian they descended rapidly through a most picturesque cañon to the small but thriving mining town of Banner. The road passes down the course of the stream, over boulders, and through pools of water—down, down, always descending, nearly 2000 feet in seven miles. Soon after passing Banner they saw the first of what they considered rare Cacti—viz, *Echinocereus Engelmanni* and *Opuntia basilaris*, but they decided not to get any specimens until the return journey. At length, after another eight miles, they reached their camping ground for the night. The mules had travelled about forty-five miles, having started some eight miles from Romona to their camp, which was about 4000 feet elevation.

Among the various fine specimens of Cacti secured by Mr. Walton was a huge one of *Echinocactus cylindraceus*, and which took several assistants to lift from the ground. Being anxious to investigate the root action of the immense *Cereus giganteus* in its native habitat, he negotiated a specimen about 30 feet high, growing on a high elevation, with all the manual force he could command, and eventually toppled it over, but was surprised to find, considering its size, the comparatively small root anchorage it possessed, though probably about a century old.

In concluding further pertinent remarks appertaining to the Cacti and other flora of the States visited, he humorously remarked that a "Klondyke" is in store for the person who could cultivate such Cacti without spines as food for the oxen, sheep, and goats during a scarcity of other vegetable food.—W. G.



RECENT WEATHER IN LONDON.—Notwithstanding the fact that a considerable amount of rain has fallen of late the wind still continues cold. When the sun is shining brightly it is not so noticeable, but in the evening it is keenly felt. There were one or two heavy showers on Saturday. Sunday and Monday, however, were fine, as was Tuesday. Wednesday opened dull and cold.

WEATHER IN THE NORTH.—The close of April brought no more genial weather. Saturday was one of the most bitterly cold days of the season, and rained throughout. Frost succeeded, and 4° were registered on Sunday morning; the day was bright, but cold. On Monday it snowed heavily for hours in the morning, and the day, till late in the afternoon, was one of November chill and gloom. May certainly brought no promise of milder weather in its opening.—B. D., *S. Perthshire*.

THE ROYAL GARDENERS' ORPHAN FUND.—At a meeting of the Committee, held on the 29th ult., the sum of £32 2s., inclusive of two annual subscriptions for 1 guinea each, was received from the Gardeners' Charity Guild, per Mr. Gerald Dean, Secretary, as the result of the smoking concert held at the Cannon Street Hotel on March 15th. A special vote of thanks was accorded to the Committee of the Guild, and six of its members were placed on the list of life voters.

ANTIRRHINUMS IN POTS.—Those who may not have grown these summer flowers in pots, or seen them thus treated, have no conception of the striking and really effective plants they make for conservatory embellishment in the spring. At the present time I have a number of plants in full bloom, in various shades, that are not only much admired, but are really useful, because they take the place of Cinerarias and Primulas, which have run their course. My plants were obtained from seeds sown in August and wintered in a cold pit, which was well ventilated, so as to keep them sturdy. From here they were shifted into a cool house towards the end of January, and during April they have made a gay and useful floral display. They are not by any means so fleeting as some spring flowers, and they have the advantage of being useful both in the conservatory and the house or as cut flowers for vases. Only the dwarf sorts should be chosen for pot work, as there is a tendency in them to grow tall. The seeds should be sown thinly in boxes, and every encouragement given the plants for sturdy advancement throughout their career. An earlier or later supply, of course, could be obtained by sowing in accordance with the need and time of flowering. I feel sure that those of your readers who have not seen the Snapdragon thus treated would be surprised at the bright show they make in pots.—R. A.

APRIL RAINS.—What a vast amount of good has been done to the country by the abundant rains of the past month. Certainly we have had some cold weather, and especially at nights, but on the whole the month has been more typical of the Aprils of tradition than has been found for several years past. If the trees under the comparatively low temperature open slowly, at least the rains are helping the roots to produce leafage that is intensely green and luxuriant. What do we owe to the early leafing Larch for presenting to us in trees the most precocious of rich colouration amongst deciduous kinds. How the rains have helped to produce that, and also the fine leafage now seen on the earlier Horse Chestnuts. But within a few days and under the influence of warmer weather, all deciduous trees will have put on their spring clothing, fresh and green from Nature's factories, and the country will be indeed lovely to look upon. No trees just now can rival the Pear in beauty. The Plum trees have been very full of bloom, but they are pretty well over, whilst the Pear bloom has but just come in. Nowhere is this more dense than in Mr. R. D. Blackmore's extensive Pear orchards at Teddington, where the free grown trees towering up spirally to considerable heights are masses of snowy whiteness. It may be well with such wealth of bloom everywhere, for thinning, as a means of saving a moderate crop of fine fruits, to be practised. Apple trees are just bursting into bloom, and they will show us a grand body of colour. How richly green and luxuriant is the grass everywhere; a heavy swathe for the mowers now seems inevitable. Gardens look rather bare at present, but crops are coming on rapidly, and in a week or two bareness will have changed to abundant leafage.—A. D.

PELARGONIUM DOROTHY.—The flowers of this fine variety are among the best of those of the regal section, and is not only showy, but a plant of splendid habit, dwarf and vigorous. The trusses are very large, as are the flowers, the colour being a soft satiny rose with feathered blotches of amaranth in the sepals. It is very useful, for it requires no tying, the stems being stout and self-supporting, and this is a consideration where a number of plants is grown. Being so easy to grow it is one of the best for amateur cultivators, who will find no difficulty in growing fine specimens.—R. S. E.

RICHARDIA (CALLA) MACULATA.—Though old and to some extent neglected, this is well worthy of mention as a useful spring-flowering plant, with very handsome leaves. These are halbert shaped, deep glossy green, with transparent white spots, and the spathes are white, with a deep purple centre. It is more strictly herbaceous than the ordinary Arum Lily, and after flowering must be gradually dried off and wintered quite cool, with very little moisture. Repot at the new year, just as the points of growth appear, in a sound rich compost, and water freely when established. It is capital for grouping in the conservatory.—C. W.

OLD AND NEW MELONS.—As the Melon season is coming along the tasting faculties of the R.H.S. Fruit Committee will again be brought into action, that is if the forthcoming season brings so many so-called new varieties to be put on the table as has been the case hitherto. In many establishments we see a few standard sorts, of which Hero of Lockinge is an illustration, still relied on. There are a few old varieties of admitted merit which seem to lose little of their true character in spite of the years they have been grown, and yet in the meantime there have been many new sorts, which have come like a flash in the pan, and gone back into obscurity.—V. T.

TULIPS AT LONG DITTON.—I observe a contributor to a daily paper whose pen seems to have run away with him in floriferous description of the beautiful flowers at Long Ditton. Perhaps because not so enraptured with the Daffodil, I prefer to admire the glorious masses of colours found in the early Tulips at the same place, and I can imagine that any Daffodil enthusiast who has seen the hundreds of thousands of Emperors, Horsefieldis, Barris, ornatus, and others, must hail gladly the diverse and glorious hues of the Proserpines, Globe d'Ors, yellow and white Pottebakkers, De Parmas, and numbers of other early Tulips. How fine are Tulips this year, and what grand blocks of colour they give.—D.

LATE BROCCOLI.—Although while Broccolis are, or have been, turning in this spring rather later than usual, yet because of the comparative scarcity of spring Cabbages, so far seldom have they been more welcome. But very late varieties have great value, as I could but recognise when the other day, looking over a large breadth of Sutton's Late Queen, I saw the weaker plants just turning in, whilst the stronger ones bid fair to furnish larger and very firm white heads all through May. As a rule the variety turns in during the latter portion of May; but in this case, owing to the previous season's drought, the plants started late, and consequently many had not made more than half growth. The strongest ones would be the latest. Some beautiful heads of Model, misnamed something else, were staged by Mr. Wythes at the Westminster Drill Hall on Tuesday. Prices for white Broccolis in shops range from 3d. to 4d. each, and for tiny Cabbages 1½d. There ought to be money in market gardening.—WANDERER.

SPINACH BEET.—An all-the-year round supply of the ordinary or common Spinach is not always a certainty, the weather, both of summer and winter, having a favourable or untoward influence, more or less, on its welfare. Extreme heat in summer causes bolting or premature seeding; excessive rain, such as that which occurred last autumn, sets up a wholesale decay of the root stem, and severe frost destroys the plant. A sowing of Spinach Beet should only be treated as a substitute for the more succulent summer and winter Spinach, and kept as a reserve for times of emergency. The present is a very good time for sowing for affording a supply extending well into the spring of next year, allowing plenty of space between the rows, and when sufficiently advanced for thinning between the plants in the rows too. Freshly manured ground is not desirable; it is better to employ a site that was manured for some previous crop, and this made firm. A vigorous and succulent leaf growth is not that which can best stand the frost, so it is safer to err on the side of poorness, rather than over-richness in the soil. An ounce of seed would be sufficient for a small sized garden, and twice that amount would probably supply the needs of a large one. Any position, except on a sunny south or a cool north border, would meet all requirements in the matter of site.—S.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
April.										
Sunday ..23	S.S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday ..24	S.S.W.	50.2	43.8	52.4	40.6	0.02	46.9	47.9	47.2	34.2
Tuesday ..25	S.S.W.	51.3	47.0	52.8	44.1	0.29	48.5	47.9	47.2	41.0
Wednesday 26	W.N.W.	51.9	50.9	55.6	46.2	0.14	49.1	48.1	47.5	45.2
Thursday 27	N.	50.3	46.5	54.6	43.4	—	49.4	48.5	47.5	37.6
Friday ..28	S.W.	53.0	48.5	59.9	39.9	0.03	49.5	48.7	47.8	31.1
Saturday 29	W.S.W.	54.8	53.2	60.5	46.9	—	51.3	49.1	47.8	41.5
		55.2	51.5	59.9	50.6	0.11	52.2	49.6	47.9	44.8
MEANS ..		52.5	48.8	56.5	44.5	Total 0.59	48.1	48.5	47.6	43.6

The weather during the past week has been remarkable for cold rains and wind, with bright sunshine at intervals.

— **SUSSEX WEATHER.**—The total rainfall at Stonehurst, Ardingly, for the past month was 3.25 inches, being 1.50 inch above the average. The heaviest fall was 0.70 inch on the 21st. Rain fell on twenty days. The maximum temperature was 67°, on the 28th; the minimum, 30°, on the 12th. Mean maximum, 55.26°; mean minimum, 39.28°. Mean temperature, 47.27°—about the average. The weather up to the 15th was wet, dull, and cold; since then more favourable. Fruit bloom is abundant, strong, and promising, but it has been retarded.—R. I.

— **APRIL WEATHER AT BELVOIR CASTLE, GRANTHAM.**—The wind was in a westerly direction twenty two days. The total rainfall was 2.09 inches, which fell on twenty-three days, and is 0.29 inch above the average for the month. The greatest daily fall was 0.28 inch on the 13th. Barometer (corrected to sea level and reduced to 32°): Highest reading 30.280 inches on the 22nd at 9 P.M., lowest reading 29.001 inches on the 13th at 9 P.M. Thermometers: highest in the shade 63° on the 1st, lowest 24° on the 17th. Mean of daily maxima 51.93°, mean of daily minima 39.06°. Mean temperature of the month 45.49°; lowest on the grass 17° on the 17th and 18th, highest in the sun 113° on the 5th. Mean temperature of the earth at 3 feet in depth, 44.43°. Total sunshine 110 hours 15 minutes. There were three sunless days.—W. H. DIVERS.

— **DAFFODILS FOR AMATEURS.**—Now that the thoughts of everyone are directed towards the Daffodil, let me say a word on its behalf for the beautifying of the small gardens of amateurs and cottagers. These are often bare and cheerless in the spring, because the price of such bulbs as Hyacinths and Tulips is prohibitive to their owners. The same might be said of Daffodils, but we must remember that they are permanent, and, moreover, multiply. Two years ago I was the fortunate recipient of a few bulbs of N. Golden Spur, Horsefieldi, Sir Watkin, Emperor, and others. They were planted in various positions in my garden, and have been admired by all who have seen them. Up to the present they have not been disturbed, but they have increased to such an extent that I am now in a position to supply the wants of covetous neighbours.—A COUNTRY AMATEUR.

— **QUASSIA.**—The trees which furnish so many economical products from the more tropical regions are, in many cases, getting scarce, and those who deal in drugs are continually kept on the watch for other species of trees having similar properties to replace the original ones. There is the Quassia, which is a small tree growing in British Guiana, botanically known as *Quassia amara*, and is getting nearly exterminated; and another tree, known as the Bitter Ash—botanically as *Picraena excelsa*—is largely used for the same purpose that Quassia chips are used. An infusion or tea made of Quassia chips is especially destructive to the green fly and other insects, which are so troublesome to the ladies who grow their own flowers in conservatories. The usual remedies applied by commercial men in the shape of kerosene emulsion, tobacco smoke, tobacco water, and other things, are more or less offensive, while Quassia tea has no objectionable features whatever, and is just as effective. It is a remarkable fact that an infusion of Quassia should be so destructive to the lower orders of animal life, and yet be so harmless to the human system. One may drink it as we drink Chinese tea without any serious consequence.—("Meehan's Monthly.")

— **PRESENTATION AT LEWISHAM.**—On leaving Ryecroft Nursery, Mr. W. Wright, who had been foreman for eight years, was presented with a marble timepiece by the rest of the employes as a token of their esteem for a genial fellow worker. Mr. Mackenzie, in making the presentation, thanked Mr. Wright for his unfailing courtesy to all those placed under him, and, on behalf of all, wished him prosperity in his future career.—H. S.

— **THE EXTENSION OF KEW GARDENS.**—On Monday the grounds of the Queen's Cottage at Kew were for the first time thrown open to the public as an extension of Kew Gardens. There was no opening ceremony, the gates of the fence that separate these grounds from the rest of the Gardens being simply unlocked at twelve o'clock in the presence of Sir W. Thiselton Dyer, the Director. The addition has been made in commemoration of the Diamond Jubilee, but there were only a few hundreds of visitors to the place during the day.

— **THE BUD MOTH CATERPILLAR.**—This pest attacks other orchard trees besides Apples, and the word "Apple" in the heading of my notes of last week was too restrictive. I have found the caterpillars on Pear trees as well as on Apples, also winter moth caterpillars on both. Mr. Hooper of Swanley informs me that he has found a specimen of the bud moth caterpillar on an Apple tree. Mr. Wilfred Youngman of Charsfield, Suffolk, has sent me some specimens of the red moth caterpillar. He says he has noticed them for years past, but had not been able to identify them.—WILLIAM E. BEAR.

— **HOYA BELLA.**—In a strong moist heat this charming little Hoya does well, and as it is very easily propagated and quickly grown we should see more young healthy specimens of it. In many places one comes across old insect-infested plants of it as thick as a Thorn hedge, and a few flowers, but young vigorous plants well established in baskets of rather poor material flower abundantly, and are very striking. Each shoot will have its flower umbel, and the single blossoms are extremely pretty with frosted white petals and an amethyst purple centre. Rough peat, loam, and a few nodules of charcoal suit it well for compost.—H. R.

— **BROWALLIA SPECIOSA MAJOR.**—This is a plant that should have a future before it, by reason of its freedom of flowering, its bright blue colour, and distinctly pleasing aspect as a pot plant. It is easily raised from seeds, but for some strange reason I have failed to find it offered in any seed catalogue until this year. I have not seen it used as a summer bedding plant, but I presume it will, if it does not already, figure in up-to-date bedding. It is distinctly superior in every particular to the older and once popular *B. elatior*, and can be had in flower almost at all seasons of the year. Those requiring variety in pot plants ought not to miss the chance of getting seeds at once and sow.—R. A.

— **GOLDEN PRIMROSE JOHN WILKINSON.**—Last year your correspondent "N. N.," whose communications one reads with interest, sent some flowers of this plant to the Journal office and to the writer. It may be remembered that I ventured to speak favourably of the flower, which is, as I remarked, really a Polyanthus. Through the kindness of "N. N." I have had the opportunity of testing the plant by growing it, and it is only due to him to say that it is more than satisfactory, and that it fully surpasses the expectations formed of it last year. It is very free flowering, and the effect produced by its golden-yellow flowers is exceedingly fine.—S. ARNOTT.

— **CANARY GUANO.**—A sample of this fertiliser, as advertised by the Chemical Union, Ltd., Ipswich, has been sent to us for an opinion thereon. We can substantiate the claim for it that "it is perfectly clean and may be used by a lady," and to this can add if it be applied in solution to the soil in which plants are growing in a boudoir, its use would not be detected—except by the plants. The fertiliser is in the form of fine dry grey powder, and readily dissolves in water. The familiar odour of guano is present, though evidently "masked," as the doctors say, by something else. We once had some manure sent to us for trial, and after observing that small or large doses had the same effect, or no effect, on Auriculas, we potted a couple of plants in it. They grew very well throughout the season, and thus ended the use of that particular manure. If it possessed the merit of containing nothing in it to injure plants on the one hand, it contained nothing to benefit them on the other. It is not the same with canary guano, for after a few short experiments with it on Hyacinths in pots, it was evidently enjoyed by some to which it was properly applied, while others, which were purposely overdosed, had a struggle for life. There is thus "something in it," and the clean powder must be used according to instructions for obtaining the best results that it is capable of producing.

FIELDS OF WAVING GOLD.

A WRITER in the "Daily News" no doubt feels fortunate in the discovery that Messrs. Barr & Sons' nurseries at Long Ditton form "the yellowest spot on earth," and we may, therefore, be pardoned for choosing the above title for our notes of the Daffodils there flowering. That it will to some persons sound overdrawn we do not doubt, but by those who have paid a personal visit, or have even passed in the train, it will be accepted as perfectly true. Standing at either of the several entrances the fields have the appearance of waves of brilliant yellow rippling with the gentlest breath of wind. It is a spectacle to which many an on-looker might aptly apply the historical appellation of "The field of the cloth of gold," and there would be little or no exaggeration. No one can faithfully picture in the mind the exquisite beauty of the countless thousands of



FIG. 82.
NARCISSUS INTERMEDIUS SUNSET.

flowers rising amidst the green ribbon-like leafage; nor could anyone forget the scene after an inspection had been made, no matter whether they were Daffodil enthusiasts or not.

As the years roll on the number of varieties—or it may be supposed some persons would prefer to say hybrids—becomes greater, and only specialists can keep pace with the times. As a matter of fact, it is the trained mind alone that can appreciate the difference in some of them. There are, however, enough and to spare of varieties at prices ranging from a penny up to 15 guineas a bulb that are quite distinct, and of a beauty that appeals forcibly to all tastes. With a scope like this, it cannot be wondered that "Daffs" are seen in almost every garden in town and country. We might, in notes of this nature, confine our remarks to the newer and rarer varieties that are beyond the reach of all but the most highly favoured, and in doing so, be forced to omit mention of older, commoner, but not really less beautiful sorts. Such of those we shall refer to may not have the noble beauty of Monarch, the stately mien of Weardale Perfection, the exquisite delicacy of the shading in Apricot, the refined softness of Lady Helen Vincent, the boldness of Shakespeare, the chasteness of L'Innocence, or the purity of Mrs. Morland Crosfield; but they have other merits that endear them to lovers of spring's golden flower.

We shall in as few words as possible advert to varieties that have some striking characteristic which alone renders them worthy of culture, either in the borders of the small town gardens, or the beds and borders of the country home. That they flower magnificently in small, smoky London gardens we have had many proofs, and that some varieties at any rate increase and multiply under these conditions we know from

personal experience. Then there are in many gardens grassy dells and broad expanses of turf in which Daffodils can be planted, indeed under no other conditions do they look so well. To all whose facilities permit of it, we say plant sound bulbs in grass, for such is their rightful home. In the early days of the year the blades of the leaves will cut through the turf, and as spring advances so does the bud, until the stout footstalk is crowned with a nodding smiling flower. Too many cannot be utilised for such a purpose, as no one could tire of their delicate beauty. True, care has to be taken in the initial selection, as some thrive far better than others, but with the surmounting of this difficulty the grower's troubles are over, and he has only to wait for a sure reward.

It is more than probable that those of our readers who reside in or near the metropolis would visit the Drill Hall in James's Street, Westminster, on April 18th, when the Royal Horticultural Society held one of its popular meetings, and those who did so might have then noticed *N. intermedius* Sunset, which is represented in fig. 82. It is not new, but sufficiently beautiful to receive an award of merit from the Narcissus Committee. As may be seen it is of the small tazetta type, the colour being canary yellow in the perianth and rich orange in the cup. It has the additional recommendation of being delightfully fragrant, resembling the Jonquils in this respect. Of these latter we need say nothing, for they have been popular favourites for more years than one cares to remember. Possessed of the same desirable attribute—perfume—is the chaste *juncifolius*, or Rush-leaved Daffodil, with whose chaste beauty everyone is familiar. Look, too, at *cyelamineus*, *triandrus*, *corbularia*, *Backhousei*, *Macleai*, and *Nelsoni* in variety, and think of the diversified beauty that can be found in these half dozen types! Not one variety of the whole can reasonably be omitted from a collection that has any pretensions towards completeness. There is a tender charm about them all, but in none more than the prettily named "Angel's Tears."

Let us, however, turn now to a section that is probably as large as the above six combined—namely, that which is distinguished by the appellation Leedsii. Of this type we have chosen a group of four for reproduction (fig. 83), to which we have added a variety of *incomparabilis*, known as *Stella superba*. The latter is one of the most attractive specimens in the Barr museum, and has a habit of looking one straight in the face. It is an enlarged and improved *Stella*, which is an ample description for anyone. Reverting to the Leedsis there represented, we see at the top on the left *M. Magdaline de Graaff* with its broad white perianth and rich, deep yellow cup; in the centre *Princess of Wales*, which has a white divided perianth, and a fimbriated cream cup; and on the right is *Gem*, an established favourite, and one of the best of the section; with, at the bottom on the left, *Duchess of Westminster*, which is white, with a long delicate cream crown; *Stella superba* occupying the lower right hand corner. There are other Leedsis besides these, but they will suffice as examples of a charming type of the Daffodil family that produces flowers in abundance of the greatest value for cutting.

Turning to those that are distinguished as Barri, after the renowned firm whose flowers we are reviewing, we are constrained to commence with conspicuous, than which no Daffodil of any section is more beautiful or more generally admired. A score of thousand bulbs produced such an effect as to impress everyone and to send the enthusiast into ecstasies of rapture. One of those in the party when these notes were made went down on his knees, the better to appreciate the glow of crimson on the carpet of gold. And they were worth it. *Flora Wilson*, with its white perianth, is very showy, as is *Sensation*, of which the soft yellow crown is margined with red. Smaller than either the Leedsii or the Barri sections are the varieties of *Burbidgei*, which come with poetical and a few others in the category of "true" *Nareissi*. Of these we were particularly attracted to *John Bain*, *Agnes Barr*, *Falstaff*, and *Mercy Foster*, though the others would be considered by many as of equal beauty. There can be no necessity to dilate upon the beauty and value of the poetical section, so well is it known, but it may be said in passing that the merits of poetical *præcox grandiflorus* for early flowers entitle it to more recognition, as it is several days ahead of *orratus*.

From the very small we will transfer our attention to the very large, to the section that claims *Monarch*, *Weardale Perfection*, *Apricot*, and *Mrs. Morland Crosfield* as its own. Here we have boldness in the flower, richness and diversity of colouration, with strength of constitution—merits that place the *Magni-coronati* group at the top of the tree. Leaving the very expensive, where, may we ask, will a better Daffodil be found than *Emperor*? We will answer ourselves in one word, and that is, *Nowhere*. It is simply superb. Equalling it in beauty, if not in size, is *P. R. Barr*, which is rather more refined. But what of *Golden Spur*, *Ard Righ*, *Henry Irving*, *maximus*, and *M. J. Berkel y*? Nothing; their names are quite sufficient. There must be included some bicolors with their white perianth and yellow cup; they are too beautiful to be omitted. We should choose *Empress*, *Horsefieldi*, *Madame Plomp* (if not too high in price), *Victoria*, *Mrs. Walter Ware*, and *grandis*, the latter particularly for late flowering. Each of these is worthy of a place in every garden. Then, too, we have the sulphur coloured varieties, which appeal strongly to most growers. These are numerous, and the shades of colour in both perianth and trumpet are so delicate that personal selection is almost absolutely essential.

It would be an unjustifiable action for any writer treating of Daffodils to omit reference to the *incomparabilis* section, *Stella superba* being so far the only one to which reference has been made. Who does not grow the splendid *Sir Watkin*? It is, perhaps, one of the most popular varieties in cultivation, and rightly so. If it were more abundant, what a favourite *Gloria Mundi* would be? Unfortunately the price of 25s. per bulb is

somewhat prohibitive. It is one of the loveliest flowers we have. If not quite so showy, there are many that are equal for general purposes, of which Gwydyr, Beauty, C. J. Backhouse, Autocrat, and Frank Miles may be cited as examples. For cutting purposes and for naturalisation in grass the varieties of incomparabilis are probably unrivalled, and will become more and more grown for these purposes alone. Then, too, there are the double forms, which appeal to many persons, though not to all. Of these Butter and Eggs, Eggs and Bacon, and Codlins and Cream are the best known.

The season of the Daffodil is passing for another year, and though there will be flowers for many a day, their greatest beauty will be seen no

at the present time is appalling. Gardeners have at all times been prepared to lose some of their Gooseberry and Currant buds during the winter, and Green Peas, Lettuce, and other vegetable plants in summer, as well as a portion of the ripe fruit; but I think it is quite a new departure for tomtits, sparrows, bullfinches, green linnets, and other birds to take to the Apple, Plums, Pears, Cherries, now nearly or quite in bloom. They simply nip out every flower bud, eat the short pedicel, and let the other portion fall to the ground. One other fruit bush I forgot to mention is the Black Currant. This they will completely ruin if not checked promptly. I have never known any birds to interfere with Black Currants before the present season.

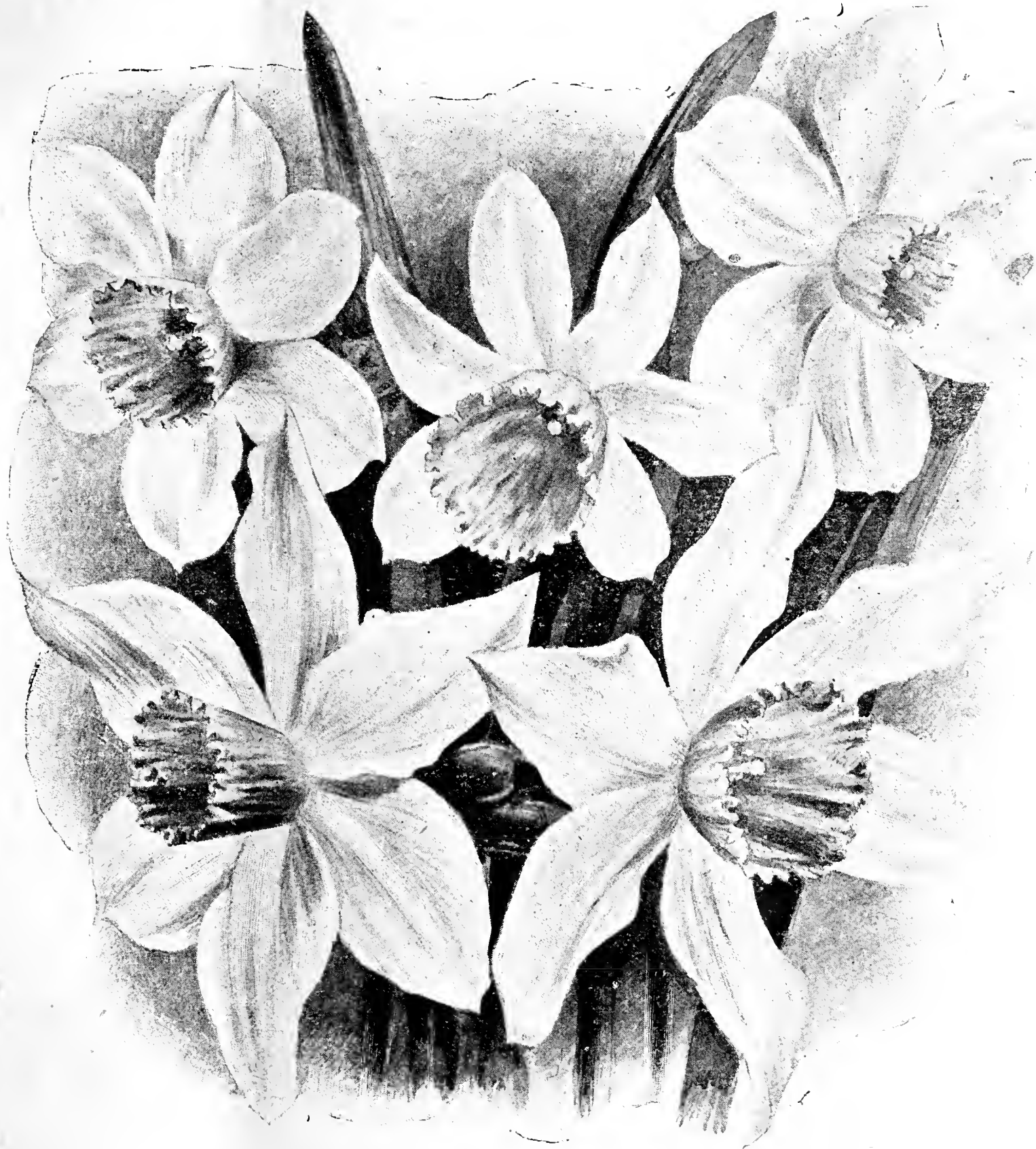


FIG. 83.—GROUP OF NARCISSI.

more until another century has been ushered in. But there yet remains sufficient at Ditton to appease the keenest appetite, and those who would visit the display should do so at once. During the next week or two there will be Daffodils in numbers and Tulips in abundance, not to speak of other flowers that lend their aid towards the glories of spring. —ENTHUSIAST.

BIRDS AGAIN.

I THINK that the time has come for some decisive action to be taken in order to keep those birds which are destructive to garden and field crops within reasonable limit in numbers. The amount of damage being done

Quassia chips were formerly quite sufficient to keep them off, but neither this nor cotton is of any use now. The damage does not end in the kitchen garden—they are equally destructive in the shrubberies. Amelanchiers, Viburnums, Japanese Cherries, Weigelas, Pyrus, Thorns, and other flowering shrubs are ruined for the present season—not only so far as their flowers are concerned, but in many cases the stems will be quite bare, and will require cutting back much in the same way as Gooseberries and Currants sometimes require to be pruned.

This is a kind of thing which will not get better, but will become worse as birds increase (which they undoubtedly will), now that they have acquired a taste for the buds at this season of the year. We must not destroy them during the spring and summer months but we need not forget them after the close season.—T. ARNOLD.

STOCKS FOR FRUIT TREES.

"HAVING read with pleasure Mr. Lambert's and Mr. Pearson's observations on stocks for fruit trees, on pages 314 and 337 respectively, I should be glad if you could find and republish an article by the late Mr. Thomas Rivers, which appeared in the *Journal of Horticulture* about thirty years ago. I have often thought it was the best contribution on the subject I have ever read, and many times regretted I did not preserve it. I can only say, as a guide for its discovery, that it appeared soon after the title of our Journal was changed from the 'Cottage Gardener.' As a young gardener then, the article interested me greatly, and I took some extracts from it, and I am sure it would interest many readers who have not seen it, as well, perhaps, as some who have a reminder of old times and old masters." Thus writes an "Old Gardener," and we are glad to comply with his wishes. We may now say that Mr. Lambert's article was written for and read at a meeting of the Herts Gardeners' Society, a fact that was not stated on his M.S. The following is Mr. Rivers' article.

STOCKS FOR APPLE TREES.

There is, I think, nothing more interesting to the practical horticulturist, and I may also add, to the theorist, than the influence of the stock on the graft, in plainer words, on the tree grafted on to a stock, and the converse of the proposition, the effect of the graft on the stock. The latter being of a far more extensive nature than the former, yet, as it seems to me, not much known or expatiated on by horticultural writers.

INFLUENCE OF STOCKS.

There is, as far as I have experienced, no fact so prominent in fruit culture as the effect of the Paradise or surface-rooting stocks on the Apple tree. By the simple choice of a stock we can make a giant into a pigmy; and such varieties as Bess Pool, of which I have seen trees rivalling large Oaks in magnitude; the Bedfordshire Foundling, the Tower of Glamis, the Blenheim Orange, and other vigorous-growing sorts, can be at once reduced to small garden trees, rapidly arriving at a sort of premature maturity, and bearing profusely, which is brought about by merely selecting the kind of stock likely to produce such a result.

THE FRENCH PARADISE.

The variety best known by the gardeners of the last century is that which we now call the French Paradise, "Pommier de Paradis." This would seem to be of Eastern origin, for some few years since the London Horticultural Society introduced the "Dwarf Apple of Armenia," which, as far as I could judge, was identical with the Pommier de Paradis. This kind of stock is noticed by Miller in his Dictionary, in the edition about 1750. I append an extract from it, which may interest some of your readers, showing as it does that there is nothing new in what has been said in your columns about Paradise stocks.

The peculiarity of the French Paradise is its remarkable effect on the graft, dwarfing it to an extent scarcely credible. The proportions of growth are something as follows:—A tree two years old on it will be about 2 feet in height, and covered with blossom-buds. A tree of the same age, and growing under the same circumstances, grafted on the Doucin, will be from 3 to 4 feet in height, and well furnished with blossom-buds, but not so abundantly as the tree on the French Paradise. A tree on the English Paradise stock will attain the same height, and be in the same condition as to bearing as that on the Doucin. A tree grafted on the Crab or Apple stock will at the same age be 7 feet high, and unless one of our free-bearing sorts, such as the Keswick Codlin, Hawthornden, and some kinds of the like habit, will be bare of blossom-buds. I give these results not as being exact, but to convey an idea of the effect of the different stocks I have named.

EXPERIMENTS.

The Pommier de Paradis has been found too delicate for some soils and sites in England. I have found it so at Sawbridgeworth, and Mr. Pearson of Chilwell has experienced the like in his deep fertile loamy soil. Fearing that I might have made my two or three essays on a soil too cold, I made a further trial, and had 500 planted in a fine deep sandy loam, in the middle of a quarter, with 500 Doucins on one side, and 500 English Paradise on the other. The Pommiers de Paradis nearly all soon died from canker—no frost seemed to do them any injury—while the two kinds of stocks I have named here produced healthy trees free from any disease. It seems, therefore, that in some soils and sites this stock is delicate. Against this we have the experience of Mr. Scott, who states that with him this stock is perfectly healthy. This is, no doubt, owing to his warm, fertile soil, and the soft air of Somersetshire, which is very different to the harsh, dry air of Hertfordshire.

There is a curious fact relative to this stock which belongs to my second postulate, but should be mentioned here. If a healthy graft is

placed on a French Paradise stock the first year after being planted (stocks are for the most part grafted the second year), it seems to give health and vigour to the stock and to rescue it from canker. It is very curious to see trees in pots on this stock after three or four years' growth; the graft swells over and forms a large circular protuberance, as if impatient to escape from its thralldom; and the roots of the graft break out close under the swollen part; so that if the base of the graft were covered it would put forth roots, and, to use Miller's words, "would be equal to no stock." It is exceedingly interesting to watch in the graft this apparent yearning for more food. Apple trees on the Pommier de Paradis form the prettiest and most fruitful of all bush trees when cultivated in pots. Seedling pigmy stocks have been raised here. These will probably prove hardier than the French Paradise, and have the same dwarfing tendency.

THE ENGLISH PARADISE.

The second kind of Paradise stock deserving of a few words is the English Paradise stock—a very old variety, which some thirty or forty years ago I used to receive from the Knap Hill Nursery, where it was propagated by layers. It was very distinct in its habit, and had rather large roundish leaves and pale bark. As far as I recollect, this was the only kind of Paradise stock employed in those days, and then to a very limited extent; for 100 Apple trees on Paradise stocks then sold I should calculate that 5000 are now (1867) sent out by nurserymen. There are some seedling stocks of this race—two raised here, and one of them, called the Broad-leaved Paradise, resembles the sort I shall next describe. They all swell with the graft, and produce healthy, fruitful garden trees.

THE DOUCIN.

The third variety of the Paradise stock race is the Doucin. This is probably of French or Dutch origin. There are several varieties of it, some of them worthless from their liability to canker. Those with small leaves like the Crab are to be avoided. The true sort has large pointed leaves of a dark green; the bark on its young shoots is of a very dark brown spotted with white; its leaves are more pointed than those of the Broad-leaved Paradise mentioned above, and not quite so large; it does not swell with the graft so well as the English Paradise stocks, but it forms healthy and fruitful garden trees.

THE BURR KNOT.

The next race of surface-rooting Apple stocks is the Burr Knot, the old variety. The Burr Knot of most of our gardens bears very fine fruit, and is a valuable kitchen Apple. Like all of the Paradise race of stocks it roots from truncheons, or stout two and three-year-old shoots, planted in the ground, reminding one of the orchardists at Valparaiso and other parts of Chili, who do not plant a tree but a branch, which takes root, and at once forms a bearing tree. This brings to mind the Burr Knot Apple at Ware Park, Herts, there called "Byde's Walking-stick Apple," simply because an old magistrate who lived there early in the present century used to stick in a branch of the Burr Knot wherever he thought an Apple tree wanting. The trees are there still (1867).

The "burrs" which form on the stems of Apple trees are, or seem to be, bunches of incipient roots. The English Codlin, formerly employed as a dwarfing stock, and mentioned by Miller as being used for that purpose, has burrs on its stem; and stout shoots, planted rather deeply, will root and make dwarf prolific trees.—T. R.

[Extract from Miller's "Gardener's Dictionary," 7th edition.]

"The Paradise Apple hath, of late years, greatly obtained for stocks to graft or bud upon, but these are not of long duration; nor will the trees grafted upon them ever grow to any size, unless they are planted so low that the cyon may strike root into the ground, when it will be equal to no stock, for the graft will draw its nourishment from the ground, so that it is only by way of curiosity or for very small gardens that these stocks are proper, since there can never be expected any considerable quantity of fruit from such trees.

"These trees have been much more esteemed in France, where they were frequently brought to the table in pots growing with their fruit upon them; but this being only a curiosity it never obtained much in England, so that the gardeners do not propagate many of them here at present.

"There is another Apple, which is called the Dutch Paradise Apple, much cultivated in the nurseries for grafting Apples upon, in order to have them dwarfs; and these will not decay or canker as the other, no do they stint the grafts near so much, so are generally preferred for planting espaliers or dwarfs, being easily kept within the compass usually allotted to these trees."

[Young gardeners and others will recognise that the Paradise stock is not so modern as some of them conceive it to be, as these observations by Miller were written 150 years ago.]



ROSE SHOW FIXTURES IN 1899.

- JUNE 13th (Tuesday).—Cambridge.
 „ 14th (Wednesday).—York†.
 „ 21st (Wednesday).—Isle of Wight (Shanklin).
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (R.H.S.).
 „ 28th (Wednesday).—Bath, Croydon, Maidstone, Reading, Richmond, and Ryde.
 „ 29th (Thursday).—Canterbury, Eltham, Norwich, and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Brockham, Ealing, Hanley*, and Tunbridge Wells.
 „ 6th (Thursday).—Co'chester (N.R.S.) and Farningham.
 „ 7th (Friday).—Hereford.
 „ 11th (Tuesday).—Wolverhampton.†
 „ 13th (Thursday).—Bedale, Brentwood, and Helensburgh.
 „ 20th (Thursday).—Salterhebble and Sidcup.
 „ 22nd (Saturday).—Newton Mearns.
 „ 25th (Tuesday).—Tibshelf.

* Show lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSES AND ROSE CULTURE.

A FEW weeks ago we made reference to the latest edition of "Roses in Pots," by the recognised master in the art of culture and description, Mr. William Paul, F.L.S., V.M.H., of Waltham Cross. The author now sends us what may be termed his Yellow Book, under the title above given. It is the ninth edition of the work, in which he deals clearly, concisely, and practically with Rose growing generally. The various forms in which the plants are cultivated and trained are described and shown, and selections of varieties in the different sections given for the guidance of the inexperienced. It is an excellent shilling's worth, and many amateurs and gardeners who do not already possess it, might with advantage have it handy for reference. It is compact, pleasantly written, usefully illustrated, and trustworthy.

RECOLLECTIONS AND REFLECTIONS.

RECOLLECTIONS are pleasant memories sometimes, but not always; yet methinks always with regard to bygone days in the journey of horticulture. Reflections, closely allied to recollections, lead us to weigh, very thoughtfully, whether we are always on the right track in the journey of our gardening life. So let it be for a few moments with our old associations in that branch of horticulture anent Queen Flora.

No one for a single moment would, I presume, venture to declare that we have not progressed; in fact every genuine horticulturist belongs to the progressive party (politics excepted). We cannot help ourselves—Nature, urged on by Divine assistance—i.e., the power given to man by the Great Power, has by this power of intelligence, study and perseverance, brought about what some folk are foolish enough to call a "revolution" in horticulture, but which I would rather call a progressive evolution.

This progression or evolution is more and more in evidence every day, and that in every branch of horticulture. The fittest has survived, and yet only to be improved upon, for every day we are perforce impelled to recognise this improvement. For instance, take Peas, *Pisum sativum*, think of the marvellous progression in this class; but you have to go back to the fact that the best varieties now in vogue have in them the old "blood" of the best Pea of years ago; it is not a new Pea exactly, it is an improvement, a progression. We have only to re-read Mr. Sherwood's paper in the Royal Horticultural Society's Journal to verify my statement. The same may be said of the Potato, and the evidence thereon given by Mr. A. Sutton, the veteran Mr. Fenn, and others. All this bears out my argument. So much for these so-called vulgar, but very useful, aye! necessary and delicious vegetables.

But, you ask, how does this affect, or what has this to do with Roses? I must apologise for preambling, but I will, with your

permission, bring once more to my own recollections, and reflect thereupon, some happy experiences *re* old Roses—partly for their own sakes, partly for the share they hold in the present state of their magnificent issue.

The late Mr. Shirley Hibberd wrote, "Let oblivion's curtain fall upon the origin of Roses." Was he right? Perhaps so, and yet perhaps not so. Without a doubt we can distinguish characteristics in our hybrids, which clearly show pedigree blood—show it in wood, leaf, and habit; and these distinctive "marks" seem to be the more intensified in the progression towards perfection. Take *La France*. Can you not see in the wood alone the old pink China? Then let us thank God for giving us the old pink China. I suppose that there is no more generally popular Rose than *La France*. Take any popular or aristocratic "occasion" where flowers in the Rose season are to be in evidence, and you will find that Covent Garden is at its wit's end to get blooms enough of this Rose to supply the demands of its importunate customers.

Again, has not dear old Général Jacqueminot a debt due to him? And, once more, that lovely coloured, mildewed-ever, yet splendid parent, *Géant de Batailles*? Reflect, ye young men of 1899? Fifty years ago, in 1849, 8000 plants of this variety were distributed in this country by Mr. Thos. Rivers.

Have you bent in rapt enthusiasm over a lovely bloom of *Senateur Vaisse*, a *Charles Lefebvre*, a *Maurice Bernardin*, or a *Duc de Wellington*? Then think of the progenitor, *Géant de Batailles*. Alas! alas! that we, poor human creatures, should so oft forget how much we, in our prosperity, owe to our human progenitors, and how little we value that worth and energetic love in them which has placed us in the position which we now hold. Success is too often blind to perceive its source.

So much for "reflections." To go back for a moment to recollections. There appears to my mental eye a real old-fashioned garden, with its broad central walk, on either side a 3 or 4 foot border filled in with herbaceous stuff (but surely this usual gardening term "stuff" is a very uncomplimentary one), and at intervals I see some grand standards "massed in bloom," of such free flowering Roses as *Duchess de Cambacères*, *Blairii* No. 2, *Jules Margottin*, *Acidalie*, *Anna Alexieff*, and others of like growth.

Yes! The exhibitor's craze is doing good, very much good, especially in the decorative department, but for all this my own eye will not allow itself to be dimmed to the sight of the great grandfather Roses which have enabled the Dicksons, the Pauls, and the others of these late years to "bring forth fruits unto perfection."—J. A. W.

PETUNIAS.

THIS beautiful showy half-hardy perennial has been greatly improved in colour, size of flower, and habit of growth. There are both tall and dwarf, single and double varieties flowering. The dwarf are excellent for bedding, as they grow only about 6 inches high. The tall also answer for bedding, but they must be pegged down. The singles are the showiest, and generally the most floriferous for outdoor culture, and are readily raised from seed, which ought to be sown in March, the seedlings being grown in 6-inch pots until time for bedding out. Heat is only required until the plants are established in the pots, affording them afterwards a cool, airy position to render them sturdy for planting. Rich soil is not required for Petunias when planted, as this will cause them to grow more vigorously than is desirable for freedom in flowering. Poor soil will give the best results, and a dry time, too, is more favourable for a good display of flowers than moist weather.

Petunias are very effective as pot plants, when grown in compact form by frequent stopping of the shoots and tying them out. The double varieties are more easily dealt with, as they are naturally sturdy growers, especially when grown from cuttings, which, however, should only be preserved from approved and select varieties. Plants for blooming early in the year may be obtained from seeds sown in August, wintering the plants in 3-inch pots, and shifting them quickly in early spring in plenty of light and heat. The best compost is loam, leaf soil, and sand, potting the plants firmly and pinching back as necessary. Watering is important, as they must never want for a supply. The plants flag seriously on becoming very dry, and the leaves are liable to turn yellow at the base.

Plants not raised in autumn may be obtained from seeds sown in January, February, or even March. Pans or boxes are preferable to pots, as a good wide surface is available, on which the seeds may be distributed evenly and thinly. There is no waste of seed, and the plants germinate and grow stronger. Equal parts of loam and leaf soil, with sand, may form the compost, pressing it down over the drainage, and filling up to an even surface. Water with warm water, and after draining scatter on the seed, covering with fine white sand. Place in a temperature of 60°, and sprinkle very lightly to maintain the requisite moisture for insuring germination.

A warm moist base of cocoa-nut fibre refuse is very suitable. Give special care when the seed is germinating so that the soil is neither dry nor wet. When the seedlings can be readily lifted transplant an inch apart. The next move must be to 60-pots, following with 5-inch or 6-inch size. Afford shade and sprinklings of water to encourage growth, but the plants must also be moist at the roots.

After potting keep closer for a time—a week or ten days will be long enough—then afford more air. Stopping the most vigorous growths must be practised, so that the plants may be even and regular.—E. D. S.

GOOD WORK AND GOOD HINTS.

It is pleasant to find good work of whatever kind and wherever seen in gardening, and to take and record hints that may be useful or suggestive. It is feared that many a good point is seen, and momentarily admired, but for some reason or other—or no reason—is passed by as if it were unworthy of public mention. I will not make the mistake of thinking that what I have had the pleasure of seeing lately in a florist's establishment at Derby will be of no interest to others, for I believe many may like to know of what afforded satisfaction to one who has had opportunities for seeing good work of the kind in which readers of "our Journal" are interested.

THOUSANDS OF ARUM LILIES.

Those which I have to refer to were to be seen "in their thousands" in pots, boxes, and planted out. All were in full flower, and had been since last November. Those in pots were really magnificent specimens. They were in 10-inch pots, each containing three large selected crowns, and my attention was called to the striking fact of every leaf having its flower bud springing up soon after full leaf expansion. This free flowering was attributed to the thorough resting and drying off which the plants have in summer. They then become quite denuded of leaves, the crowns are well ripened, after which they are assorted, the finest being potted, the next size planted in boxes or on shelves, all of them coming into flower in November, and proving a source of profit for six or seven months.

A BRILLIANT WALL OF "RASPAILS."

Imagine a wide and lofty span-roof house, ends east to west, with an interior wall along the entire length of it, shutting off about a third of the width for a north house for Ferns. About a year ago the valuable double scarlet Zonal Pelargonium F. V. Raspail was planted out of 48-sized pots in a narrow border along the entire length of 100 feet on the south side of this wall. They now cover the wall to a height of about 6 feet, and are laden with thousands of the compact rich scarlet trusses, although flowers had been cut all the winter. If my memory serves me aright Mr. Cannell once showed me a "Raspail Improved," but I very much question if it can be an improvement upon the free-flowering of the original as I saw it. I used to admire it very much at the Horticultural College at Swanley, where large quantities of it were grown in pots for cut flowers for market, but I never realised its true value and beauty till I saw it on the wall referred to. It looks like growing to the top of the wall, I know no reason why it should not, and if it does it will not only be a lovely but an instructive sight, as showing how profitable an interior wall may become under skilful management. On a side stage a large quantity of *Lilium longiflorum* was remarkable for vigour of growth and promise of flower, there being from three to six buds in each pot with four to six flower buds upon each of them. My attention was called specially to these plants as being from Japanese bulbs, and altogether superior to the growth from Dutch bulbs last year. A thousand Tuberoses were being started in shallow boxes under the side stage.

WHITE MARGUERITES AND THEIR LEAF-MINING ENEMY.

"White Marguerites are always in demand, and always go well," I was told, as I came upon thousands of plants full of bloom. The system of culture is spring propagation, bedding out in summer, lifting and potting in August; they then flower in September, and continue flowering till spring. Some trouble had been experienced from attacks of leaf-miner insects. These insects are often troublesome amongst *Chrysanthemums* and *Cinerarias*, as well as *Marguerites*. I saw a fine lot of *Cinerarias* last season so disfigured by leaf-miners as to be practically useless. It may be well to mention here that the remedy for this pest is tar water, made by boiling half a gallon of coal tar in a gallon of water, to which, when cool, add 50 gallons of clear water. Spray thoroughly over plants, stage, woodwork, and glass. In the use of this, as of all other insecticides, prevention should be our aim: when the presence of the pest is suspected, occasional spraying prevents attacks—a far better plan than trying to cure a bad case of infestation, for the foliage has then suffered beyond recovery.

ACKNOWLEDGMENTS.

It would only be fair to say that such objects as I have briefly described and the hints recorded are the outcome of a visit to Mr. F. Lewis, a most capable florist and decorator at the Mile Ash Nursery,

Derby. It would serve no useful purpose to enumerate a list of the many flowers grown there. I have said enough to show something of good work done by a good man—work so well done that it has its lessons for others, among which not the least is the industry, energy, and intelligence that are brought to bear upon it, and the success which is already crowning efforts so well directed, and energy so well applied.—EDWARD LUCKHURST.

PERENNIAL BORDER FLOWERS.

ALYSSUMS.

WHILE several of the Madworts are more suitable for the rockery than the border, there are still some which may be used in the latter with advantage. Of these, *A. gemmonense* may be mentioned as a desirable species, although not quite so hardy as *A. saxatile*. It has the merit of flowering over a longer period than that species. It grows about a foot high and produces a profusion of small yellow flowers. There is a variety with paler flowers named *A. gemmonense sulphureum*.

Alyssum saxatile is the most valuable of the genus for the border, where masses and clumps make a brilliant effect in late spring and early summer. It flowers profusely, and is very showy with its small bright yellow flowers, which quite cover the foliage. The latter is of a hoary grey. Of *A. saxatile*, which has the popular name of Rock Madwort, there are four varieties. One is *A. s. compactum*, of dwarfer habit; another is *A. s. variegatum*, which is pretty but rather tender; the third is *A. s. Tom Thumb*, a very dwarf form which is not so free-flowering as the type; and the fourth, *A. s. fl.-pl.*, a double form. Another border species is *A. Wiersbeckii*—a summer bloomer—which grows about 1½ foot high and has yellow flowers. The Alyssums are easily raised from seeds or by means of cuttings taken off with a heel in spring or early autumn, and inserted in sandy soil under a hand-light or frame. *A. saxatile compactum* does not come quite true from seed, and *A. s. variegatum* ought also to be propagated by cuttings. The Alyssums are very useful in the border, and *A. saxatile* has often been used for spring bedding. It flowers more freely, however, when left undisturbed.

AMSONIAS.

The Amsonias—named in honour of Charles Amson, a traveller—are so seldom offered that it seems needless to say much about them; yet the grower of hardy flowers may like to know at least a little about them. They are hardy plants, which come from North America. The only members of the genus included in the "Kew Hand-list" are *A. tabernamontana* and its variety *salicifolia*. The former has pale blue flowers with narrow lobed corolla, and a tube of a funnel shape and ovate lanceolate leaves; the latter has light blue flowers with a white throat, and is of less upright growth than the type. They are grown in borders with a little shade. They may be divided in spring. The Amsonias are not particularly showy.

ANCHUSAS.

A few of the Anchusas or Alkanets are quite hardy and perennial, but what the writer considers one of the best—*A. italica*—is only a biennial in most gardens. It has brilliant blue or purple flowers and grows about 4 feet high. *A. sempervirens*, although naturalised in some parts of Britain, is worth growing in rough borders, where its fine blue flowers look well. For "wild gardening" it is well adapted. It grows in one spot by the wayside a few miles from where the writer lives, and, growing among other herbage, gives a pretty effect; it is also pleasing by the sea in half-shady places. It grows about 2 feet high. *A. Barrelieri*, which grows from 1½ to 2 feet high, and has white tubed and yellow throated blue flowers, is a native of the southern part of the continent of Europe. It is not, however, hardy with the writer. *A. italica* and some of the others of the genus are favourite bee plants; this may recommend them to some. The Anchusas are increased by seeds.—S. ARNOTT.

(To be continued.)

"TRIMMINGS."—When the ladies at the hall send down to the garden, as they do once or twice a week for flowers, the order generally has tacked on it, "and plenty of Fern or foliage." Ah! we say, that's all right as to flowers just now; we have pretty well of Roses—*Maréchal Niel*, *Gloire de Dijon*, *Niphetos*, *Souvenir d'un Ami*, and *Catharine Mermet*, indoors and out; *Daffodils* in many varieties, *Hersefieldi* a special favourite; but as to "trimmings," as this green decorative material is called in the bothy, that is another matter, with the *Adiantums* and Ferns generally all cut down and repotted to go on to do their work in the coming season; but something must be found, and, turning round, "Oh, here it is!" That friend in need proved to be a large plant of the Climbing Fern, *Lygodium scandens*, and right well it serves, with its fine fronds of two sorts, the plain ones unfertile and the crinkled ones fertile, thus providing variety at once, and without going anywhere else. Another Fern, which is most useful at this empty time is *Nephrodium molle*, which sows itself all over the stove, and is generally to be depended upon for a few good fronds. As a variation from the greenery commonly sent in with flowers we find that variegated foliage is often very acceptable as "trimmings," and we therefore occasionally send in variegated *Panicum*, *Tradescantia zebrina tricolor*, *Strobilanthes Dyerianus*, leaves of the many varieties of *Begonia Rex*, and stray shoots of *Coleus*. It is wonderful how ingenious we can be when necessity drives, and variation or change breaks up the monotony of life, and adds a charm even to prosaic surroundings.—P.

BORONIAS.

FEW hardwooded plants produce flowers having so delightful a perfume as some of the Boronias, and on that account alone they are certainly worthy of being grown in gardens generally. The well-known variety *megastigma* is especially noteworthy on account of its odour, for a few sprays of it placed in a glass will fill a room with its pleasing scent. The flowers, though peculiar in appearance, can scarcely be termed showy; but being borne on slender shoots, are elegant and interesting, as they supply a pleasing contrast to more gorgeous greenhouse plants. *B. elatior* produces rosy carmine flowers very profusely, and is a decidedly bright and pretty variety, which all Boronia growers should obtain. Other good varieties are *B. anemonæfolia* (pink), *B. crenulata* (red), *B. Drummondii* (rosy pink), *B. pinnata* (pink, Hawthorn scented), *B. serrulata* (deep rose), and *B. tetrandra* (pale purple), fig. 84.

Boronias are readily increased by cuttings made from half-ripened wood or young shoots. When the latter are employed the plants from which they are obtained ought to be placed in gentle heat for a couple of weeks before the cuttings are taken, otherwise many of them will inevitably "damp" or decay at the base when placed for the purpose of propagation in a higher temperature than that in which the parent plants were growing. Insert the cuttings in sandy peat, surfaced with sand, using well-drained pots, covered with a bell-glass, and placed in a temperature ranging between 55° and 60°. When water is required, immerse in a water tank without removing the bell-glass. If all go well, the cuttings will root in a few weeks; the points should then be removed, and the potting be deferred till young growths have formed—use pots known as thimbles for the first potting, and plunge these in cocoa-nut fibre refuse in a cool house, and subsequently place in larger pots. When the cuttings are formed of half-ripened wood in summer time, they will root if placed in a shady part of a cool house or pit, being of course covered with a bell-glass, or placed under a hand-light.

In order to obtain bushy plants repeated stopping should be practised till the end of May, then the shoots already formed must be allowed to grow at will, in order to become sufficiently well ripened to flower the following year. Boronias may be trained in standard form, but it takes a few years to obtain a good specimen. For this purpose select a few of the strongest plants before stopping has been done, place a stake in the centre of the pot, and train a single shoot as straight as possible, keeping all side growths removed till the right height has been attained, then remove the point of the shoot, and keep the resulting growths frequently stopped till a compact head has been formed. Do not, however, attempt to get too large a head in one season; let the last stopping be done early in June, so that the growths have time to ripen, not so much for the purpose of securing flowers, as to obtain strong breaks the following spring, as the important point to aim at in growing standards is first to obtain a vigorous plant, then flowers will come freely the following year. Standards with 3 feet of clean stem and heads 18 inches in diameter are ideal specimens, which the cultivator should strive to produce.

When the flowering period is over the stronger shoots should be cut back sufficiently to keep the plant in good form, both in the case of standards and bushes; and soon after young growths are showing freely transfer to pots two sizes larger, until they occupy pots as large as is desirable, then with careful watering and an occasional top-dressing plants may be kept vigorous for years. Some growers employ a compost formed of fibrous peat and loam in equal parts, but I prefer good peat alone, as it keeps sweet and tough far longer than the best loam; a liberal addition of sharp sand and some charcoal ought to be used.

In July place the bush plants in cool pits, leaving the lights off entirely when there is no danger of heavy thunder storms. A deluge of rain falling on the plants should at all times be avoided; for this reason it is advisable to keep standards in a cool house throughout the summer, as pits seldom afford sufficient head room for them. After the bushes are housed in September, give all the air possible for a time, and throughout the winter admit it freely on all favourable occasions, giving just enough fire heat to prevent the temperature of the house falling much below 40°. In the matter of watering, Boronias require almost as much care as *Ericas*; but during the growing season, when the soil is packed with active roots, especial care must be taken to prevent the soil from becoming dust dry, or the young growths will wither at the points, and a short time after the leaves fall in shoals.—PLANTSMAN.

"FAMILIAR WILD FLOWERS."—The current issue of this work comprises plates and letterpress of the Bugle and Tall Fescue Grass, Ivy-leaved Toad Flax, the Spear-plume Thistle, Marsh Marigold and Daisy, Agrimony, the Bird's-foot Trefoil, White Campion, Daffodil, Brooklime, and Tufted Vetch.

CEANOTHUSES.

AMONG the great variety of hardy and half-hardy flowering shrubs suitable for the open border or for walls, none is more deserving of recognition than some of the numerous varieties of the *Ceanothus*; yet they are comparatively little grown, probably owing to the idea that they will not withstand our ordinary winters without protection. Such, however, does not apply to *C. azureus*, *C. Veitchianus*, and *C. Gloire de Versailles*, more especially the two latter, and the former only requires a more sheltered position and a little protection during severe frosts. I have a vivid remembrance of my first acquaintance with *C. azureus*, which was planted upwards of fifty years ago by my late father, against an open wall about 8 feet high, in South Warwickshire, facing south-east, but there was also a still higher brick wall opposite about 12 yards distant, which no doubt assisted in sheltering it from the cutting winds; no other protection, however, was ever afforded. The plant grew luxuriantly and flowered profusely annually, and its beautiful pale azure coloured inflorescences were most attractive. If I recollect aright the specimen in question became *non est* many years ago owing to its rampant growth being unsuitable for the position.

I am, however, somewhat consoled for its loss by the existence of a fine specimen each of *C. Veitchianus* and *C. Gloire de Versailles*, growing in



FIG. 84.—BORONIA TETRANDBA.

the grounds of two of the leading residents about a quarter of a mile distant, and I have the privilege of enjoying an inspection of them almost at any time. The former has been in position for several years against the gardener's cottage, and is a large plant growing vigorously and flowering profusely every season. The site is fairly sheltered from the north-east winds, and the aspect southerly. Beautiful as it is I have a prejudice in favour of my old love, with its more elongated and graceful racemes, also less rigid habit of growth of the branches. The other specimen in question, growing in the adjoining grounds, occupies a totally different *locale*, being in a border or bed, occupied by such other plants as *Azaleas* and dwarf *Spiræas*, in a position somewhat sheltered from the direct north-east winds, and where it is thriving apace, its beautiful pale blue flowers last summer affording a unique bit of colour in contrast with the surrounding hardy herbaceous flowers and ornamental shrubs. Of *C. azureus*, however, I do not know a specimen in the neighbourhood of Birmingham growing without glass protection, it evidently being more tender than its congeners alluded to. There are several other varieties worthy of cultivation.

In addition to the foregoing there was a collection of varieties of continental origin, grown at Chiswick, and raised, I believe, by the late Monsieur Vieter Lemoine, but I do not recollect if there was any published official report of the trials with them. I was informed that they were seedlings apparently of the *Gloire de Versailles* type, but with marked differences in the character of their robustness of growth, foliage

and colour of their flowers. I understood that they were planted in the open air in the spring and lifted in the autumn for housing during the winter, a pleasing feature being their proclivity to bloom in the young state. In referring to an old notebook I find the names and description of a few of the best varieties of the seedlings in question copied from either the *Journal of Horticulture* or one of its contemporaries, and which may be interesting to transcribe here, with a view to eliciting further information of either or any of those seedlings.

One of the best was *Sceptre d'Azur*, having large and very fine spikes of pale blue flowers—an improvement on *Gloire de Versailles*, fine, free, and a vigorous grower. The darkest of all in the blue flowered section was *Firmanent*. *Gloire de Varte*, also blue-flowered, was dwarf in habit, but very fine, free, and good. *Léon Simon* was of a delicate blue shade, a good grower, and very free. *Margardoule Andusson*, of a pretty and pleasing lavender-mauve hue, was very desirable. *Bleu Céleste*, the dwarfest of all, should have made a pretty pot plant. *Celestial*, a later flowering variety, was of a deep blue colour. There were also several varieties with rose-coloured flowers and with a certain sameness of character, *Marie Simon* being one of the best, with pinkish flesh-coloured flowers, very pretty, free, and good; a decided novelty. *Le Géant*, a little paler than the foregoing, was commendable.

Here, then, provided the foregoing seedlings are still in existence, is presented by the old and new varieties a collection more or less worthy of extended cultivation for the embellishment of our gardens.—W. G., *Harborne, Birmingham*.

CALLAS.

SOME years ago the horticultural world was surprised and pleased by the exhibition at the Drill Hall of what was a great novelty, a yellow Calla; it was exhibited by Messrs. Low & Son, of Clapton, and was introduced, I believe, by Mr. White, of Pentland Lodge, and was at once considered a great acquisition. It was not, as is sometimes the case in these variations, a washed out colour, but a brilliant yellow. We have all been familiar with the beautiful white *Arum*, *Richardia* or *Calla*, whichever people might wish to call it; and I think probably if the yellow one had been introduced first, and the white one afterwards, it would have received as much honour. There is another of nearly equal merit called *Elliotiana*, but I think most persons would prefer the plain leaves of the former one to the latter. My object in writing about them is, not so much to give information as to obtain it. I was so delighted with the plant that I committed the extravagance of procuring one from Messrs. Low, being informed that it required about the same treatment as what is erroneously called "*The Lily of the Nile*"—I say erroneously, because I do not think the white *Arum* grows as farth north as the Nile; it occurs nearer to the Cape, where I am told some of the valleys are white with it in the flowering season.

The yellow forms, I believe, occur in the Orange Free State and the Transvaal, where they are found in considerable abundance. I was, however, very unfortunate with my plant; it grew and threw out an offset, which I gave to a friend whose greenhouse is kept warmer than mine, but neither of the plants survived a second year. On mentioning it to some horticulturists they said it was a mistake to suppose it would endure the same treatment as the white *Arum*, that it required more heat, and I was therefore the more startled when I read that an admirer of the flower is about to try it in the open (of course, during the summer), and am anxious to know what treatment it really requires. And here let me say that oftentimes the answers to such questions are given by persons who have all means and appliances at their disposal, and are therefore not applicable to those of limited means. What is the use, for instance, of telling anyone of this description that hot-water pipes should be run through the tanks where aquatics are planted, when he cannot afford to have such things? Can these yellow Callas be grown in an ordinary greenhouse? and if so, what is the treatment they require?

Some years ago there were introduced two forms of the white *Arum* which were dwarf in character with small flowers, and were likely to be very useful as ornamental plants for the greenhouse; one of these was *Little Gem*, the other was called *nana compacta*; the former was very dwarf indeed, and was raised, I believe, somewhere in the Channel Islands, the foliage was not more than 3 or 4 inches, and the flower did not rise more than 6 inches above the pot. With this I have been entirely unsuccessful, it grows well and throws out a quantity of offsets, but I cannot get it to flower; I have let some grow at their will and throw out what offsets they like; others I have put into small pots and not allowed offsets to grow, but in neither case have I been able to procure flowers. The other, *nana compacta*, has behaved very differently; it is not so dwarf as *Little Gem*, the flower stem rising about a foot or 15 inches, the flower is about one-third of the size of the ordinary white *Arum*; it, too, increases rapidly, and a few plants of it scattered about my small greenhouse are very ornamental.

Both of these forms are, I believe, simply what we should call sports or variations, such as occur in many cultivated plants oftentimes in a very opposite direction. Thus we have very dwarf varieties of *Roses* throwing out shoots of very great length, from which have been derived some of our best climbing flowers; as in the home-raised variety of climbing *Devoniensis*, which is, as is well known, a sport which, instead of having only a few inches of growth, will oftentimes send out shoots of 15 or 20 feet long, while the flowers produced are quite equal to those of the parent plant; and so again with the climbing *Niphetes*, which does very much the same, and is one of the most attractive of our *Roses* for covering a wall.

But I have wandered from Callas, and now merely return to them to say I hope that some kind friend will give me the information I require; for if I were to get something reliable I should, although I have lost my plants, try to replace them. One sees these yellow ones constantly exhibited in the Drill Hall, and it makes one somewhat envious when admiring their beauty.—D., *Dcal*.

NOTES FROM ROWLEDGE.

A FINE WINTER STOCK.

I SAW in a couple of large span houses the other day at Rowledge, no less than from 9000 to 10,000 plants of the beautiful pure white wall-leaved Stock, *All the Year Round*. Apart from the fact that every plant being in bloom, the house presented a mass of snowy whiteness, there was a marvellous body of perfume emanating from the flowers that seemed to be at the first almost overpowering. The plants were in fours or fives in large 48-sized pots, and had been in bloom from October all through the winter. The proportion of doubles was marvellous, being really over 80 per cent., many pots having all doubles. This is a tribute to the merit of home-saved seed, for the variety has been thus grown for some eight or nine years. For cutting through the winter few plants could excel this Stock. It merits universal culture.

CUCUMBERS.

Few growers of Cucumbers, probably none, excel Mr. S. Mortimer as a producer of fine straight handsome fruits, or in greater abundance. The real test of productiveness is found in plants that carry all their fruits for seed, less, of course, a few that may not be properly fertilised, or be otherwise cut for eating. Mr. Mortimer grows for seed production generally, and anyone looking into his houses now, where such fine varieties as *Suttons' Al*, *Improved Telegraph* (a marvellous cropper), *Matchless*, *Success*, *The Keeper*, and others, would find the plants growing in narrow ridges of soil 20 inches across, and some 8 to 9 inches deep in the centre, kept in place by boards on each side 7 inches deep. The plants are about 20 inches apart. In this way, with root room restricted, and where top-dressing and feeding can be done, not only are wonderfully fine crops produced, but fruits that must rank among the handsomest in the kingdom.

TOMATO WINTER BEAUTY.

This is the designation of a new variety of Tomato, of which Mr. Mortimer presented, at the Drill Hall meeting on April 18th, to the Fruit Committee such a large number of fine ripe fruits, and obtained for it an award of merit. A few days since I saw the variety in bulk, growing in a long low span house. The plants were those that had furnished the fruits shown on the 18th ult. These plants were in 10-inch pots, and standing four deep on each side of the house, and were in every instance so true as to be exact duplicates of each other—stout, sturdy, and so dwarf that the heights ranged from 20 to 24 inches. On the top of each plant was a big cluster of very fine fruits, each cluster being probably 3 lbs. in weight. The sample—even inferior to that shown on the 18th, for the finest fruits of the early batch had been gathered and shown previously—gave many so handsome as to be equal to the well known *Perfection* form. All were of a very heavy description, being as solid as fruits well can be. The first plants were raised from a sowing made quite early in November, the present one being from a sowing made towards the end of the month. All were placed in the fruiting pits early in January. Temperature during the winter ranged from 55° at night to 75° on sunny days. The appearance of so many plants in fruit in this way was a remarkable spectacle, and could not probably be equalled anywhere so early in the season, or by any other variety. *Conqueror*, raised at the same time, and grown under the same conditions, was far excelled by *Winter Beauty*. The fine set of fruit was produced by tapping the Bamboo canes supporting the plants daily.—A. D.

HIPPEASTRUMS AT CHELSEA.

THESE gorgeous flowers have been very fine again this season at Messrs. Jas. Veitch & Sons' nursery at Chelsea, and the house devoted to their culture presented a bright display on the occasion of a recent visit. But one has to examine the flowers themselves to see their individual merit. The firm has long been celebrated for the *Hippeastrums*, and judging by the specimens seen, an immense amount of care and attention has been bestowed upon the crossing or hybridising, for chance work would not have brought about such results. The operator has to keep in view not merely the variation in colouring, but the form and substance of the flower. Anyone who is in the habit of crossing these plants knows perfectly well the inclination to run back, as it were, and produce narrow segments, especially the lower one—such forms were almost absent in the Chelsea house. One would hardly give the Chelsea atmosphere credit for producing such healthy foliage.

To give a detailed description of all the good varieties seen would occupy too much space, so I shall content myself with noting the cream of the varieties. *Pythion* was the first to attract attention; it is a deep crimson. *Raphand* is rosy crimson, with white central veins. *Talaus*, a bright orange red, feathered and veined with white, is an attractive flower. *Ira*, another orange of a deeper shade, with a creamy white ground and veins, is of great substance. *Etis*, rich glowing crimson, is a perfect flower, as is *Tarasco*, crimson veined with a deeper shade.

Cythera is another rich crimson of capital substance, while Frusino is a bright red with green veins and throat; very large. Aradus is a fine circular flower, with a creamy white ground, heavily netted and veined with rose.

Camis, deep orange red with a green base, and a large crimson spot at the base of each segment, is distinct, as is Cupid, a rosy flushed flower edged with white. Lago is deep glowing crimson of fine shape and substance. Dunird is another good crimson with a green base. Belus, a fancy variety with a creamy white ground slightly veined with rose, is very attractive, while Eurytus, a light flower, is flushed with rosy crimson. Hylia, a white ground, is veined with rosy crimson.

Most of these seedlings were flowering for the first time, so that none of them is likely to degenerate, but, on the contrary, should improve with another year's growth. I think the firm is to be congratulated on the nomenclature, for while the names are quite distinct, they are short, and such as fasten on the memory without an effort.—J. B. R.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MAY 2ND.

THOUGH at first sight the Drill Hall presented a somewhat patchy appearance, there was really an excellent display from numerous exhibitors. Narcissi were superb, and the same may be said of the Irish Tulips. Fruits were not very numerous, but the vegetables from Mr. Wythes attracted much attention. Orchids were comparatively scarce.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs G. Bunyard, E. Shaw-Blaker, W. Poupert, A. F. Barron, T. J. Saltmarsh, A. H. Pearson, J. Wright, A. Dean, S. Mortimer, W. Bates, P. C. M. Veitch, G. T. Miles, G. Wythes, H. Balderson, F. Q. Lane, J. Smith, and W. Gleeson.

Mr. G. Wythes, gardener to the Duke of Northumberland, contributed an excellent collection of vegetables, which comprised London Lettuce, good Prickly Spinach, Little Gem Cabbages, Veitch's Model Carrots, Record and Syon Maincrop Lettuce, Syon Early Potatoes (a fine sample), Broccoli Late Queen, Sutton's Continuity, Veitch's Model, Miller's Late Dwarf, and Cattell's Eclipse, all of first-rate quality, size, and colour; Mushrooms, Tomatoes, Sprouting-Broccoli, both the purple and white forms; Endive, French Beans Ne Plus Ultra and Early Favourite in pots; also Peas growing in pots, with Seakale, Turnips, Cucumber Veitch's Perfection, Curled Kale, and salading in great variety—a truly noble exhibit for such a season.

Mr. O. Thomas, gardener to her Majesty, Windsor Castle, sent an exhibit of Peas and Tomatoes; the former were well podded examples of Harbinger and a Tomato named The Epicure, a seedling between Frogmore Selected and Sutton's Dessert, it partakes of the latter variety more than the former, the fruits being rather small but well coloured, and the bunches exhibited contained seven to eight fruits. Mr. J. Fitt, gardener to F. W. Campion, Esq., Colley Manor, Reigate, sent a box of Royal Sovereign Strawberry; the fruits were large and well coloured. Mr. J. Ryder, gardener to the Countess of Limerick, St. Albans, exhibited four dishes of Peach Alexandra, which were of good size and well finished. Mr. S. Mortimer, Rowledge, Farnham, again sent boxes of his new Tomato Winter Beauty; the fruits were large and well coloured.

A letter to the Council from the Customs authorities was read referring to the importations of all kinds of fruit, all of which, including Grapes, being expressed by hushels, and it suggested that some other denominators would be advisable. After some discussion it was resolved to ask the Council to form a small Sub-Committee from the Fruit Committee to consider the matter, and to take such advice as would assist in arriving at a decision.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, O. Thomas, C. T. Druery, H. B. May, R. Dean, W. Howe, J. Jennings, J. F. McLeod, R. B. Lowe, C. J. Salter, C. E. Shea, H. S. Leonard, J. W. Barr, Chas. Jeffries, G. Gordon, F. D. Pawle, E. H. Jenkins, H. J. Cutbush, E. Beckett, E. T. Cook, H. J. Jones, G. Paul, and E. Mawley.

The most fragrant, and probably to many visitors the most attractive exhibit in the Hall on Tuesday, was comprised of Canterbury Roses from Mr. J. Mount. In all there were six boxes of cut blooms, with trusses on long stems between. These were remarkable for the excellence of the flowers and foliage, and the stoutness of the wood. Amongst the most beautiful were La France, Mrs. W. J. Grant, Susanne Marie Rodocanachi, Catherine Mermet, Ulrich Brunner, Madame Mozart, Crimson Rambler, Captain Hayward, Mrs. John Laing, and Caroline Testout. Messrs. Hogg & Robertson, Dublin, sent a large display of Irish grown Tulips. There were single and double Dutch varieties with many species, and Darwinian types. The flowers throughout were of splendid quality, and of rich colour, but they would have produced a better effect if some green leafage had been used as a groundwork.

Messrs. Geo. Jackman & Son, Woking, exhibited an interesting display of spring flowers, comprising the double flowering Cherry, *Pyrus malus floribunda*, *Mespilus canadensis*, and *Cytisus præcox* in the shrubs, while a pretty box of *Primula Sieboldi* in a variety of colours, *Gentiana acaulis*, *Adonis vernalis*, *Anemone fulgens*, and boxes of *Magnolias grandiflora*, *conspicua*, and *Soulangeana* were very attractive, as were also a couple of boxes of rock and alpine plants. Messrs. Paul & Son, Cheshunt, exhibited an attractive group of Roses in pots. The climbing Rose, "The Dawson," with its rosy pink flowers and bright foliage, formed part of the exhibit. The specimen plants in pots presented a

very healthy appearance. Mavoureen, Ulrich Brunner, Paul's Early Blush, Innocente Firola, Beauté Inconstante, Caroline Testout, Rev. Alan Cheales, Elise Fugier, and Clara Watson were all in fine form, and contributed to the display.

Messrs. H. Cannell & Sons, Swanley, staged a basket of the well-known Primrose Miss Massey, a very fine variety, with deep crimson flowers and a bright yellow eye. Mr. E. Hill, gardener to Lord Rothschild, Tring Park, Tring, sent a small group of the yellow Arum, *Richardia Pentlandi*, with blooms very rich in colour. Mr. Jas. Douglas, Great Bookham, staged a good collection of Auriculas, the foliage and flowers being very attractive. The varieties were Elegant, Minerva, Byron, Firefly, Urania, Friendship, Florence, Boadicea, and Mrs. Markham.

Mr. H. B. May, Upper Edmonton, contributed an interesting exhibit of *Gleichenias* in thirteen species and varieties, such as *rupestris gigantea*, *speluncea*, *Mendeli*, *rupestris glaucescens*, *flabellata*, *Backhousiana*, and *longipinnata*. Needless to say, all the plants were well grown and effectively staged, with a groundwork of *Adiantums* and *Selaginellas*; also a few plants of the Crimson Rambler Rose, in 5-inch pots, beautifully grown, and covered with flowers, showing its value as a decorative plant. Mr. G. W. Piper, Uckfield, again exhibited his Tea Rose, Sunrise. It is a charming variety, and one that will be very popular; but the receptacles used on this occasion did not enhance the beauty of the flower. Messrs. J. Hill & Son, Edmonton, arranged an interesting collection of *Aspleniums*. They were very attractive, and included such forms as *Colensoi*, *biforme*, *inæquale*, *bulbiferum*, *Belangeri*, *Nidus*, and *laxum pumilum*.

Messrs. J. Veitch & Sons, Royal Nurseries, Chelsea, exhibited a box of Java *Rhododendrons*, which comprised the noted hybrids of the firm, such as *balsaminæflorum roseum*, *b. album*, *b. carneum*, *b. Rajah*, and *R. aureum*; also a beautiful *Croton*, Mrs. Ice-ton. Mr. J. T. Gilbert, Dyke, Bourne, Lincoln, staged some good specimens of Crown Imperials, very bright in colour; also some *Anemones*. Mr. J. Fitt, gardener to F. W. Campion, Esq., Colley Manor, Reigate, staged a collection of seedling *Polyanthuses*, which represented a wide range of colours and markings; also a fine bunch of double yellow Wallflower, *Cheiranthus luteus plenus* of a capital type.

Messrs. W. Cutbush & Son, Highgate, staged an interesting group of spring flowering plants. The *Ericas* were very fine, especially such forms as *E. Cavendishi*, *E. Spenceriana*, *E. erecta* (beautifully flowered), *E. candidissima*, and *E. hybrida*. The *Boronias* were also very bright. The well known red *Epiphyllum Gartneri*, and an *Azalea indica* named Chicago, were also worthy of note.

NARCISSI COMMITTEE.—Present: J. Bennett-Poë, Esq. (in the chair); and Miss Willmott, with Messrs. Jas. Walker, R. Sydenham, W. Goldring, S. Bourne, G. Titheradge, G. Engleheart, J. Pope, A. Kingsmill, P. R. Barr, and C. Scrase Dickens.

Messrs. Jas. Veitch & Sons, Chelsea, staged a large display of Daffodils tastefully arranged between small Ferns, a method some of the other exhibitors might copy with advantage. The popular Sir Watkin was in fine form; Glory of Leiden, with its bright yellow tubes, was attractive, as were also such forms as Madame de Graaff, *bicolor grandis*, Emperor, Sulphur Phoenix, Queen of Spain, F. W. Burbidge, with a beautifully fringed tube; Horsefieldi, Orange Phoenix, Leedsi Circe, *L. amabilis*, Ivanhoe, Queen Anne's Jonquil, and the beautiful Queen of Spain.

Messrs. Thos. S. Ware, Ltd., Tottenham, contributed a large display of spring flowers. The majority were Daffodils, which made a capital group. The most conspicuous forms were N. Victoria, an immense form, Sir Watkin, maximus, Barri conspicuus, Leedsi Gem, a very chaste form, Empress, Emperor, Sulphur Phoenix, Orange Phoenix, and Wm. Goldring. The other plants were a good strain of Alpine Auriculas, Muscari, *Primula Sieboldi* in variety, *Polyanthuses*, and a collection of alpine and rock plants.

Messrs. R. H. Bath, Ltd., Wisbech, staged a good collection of Narcissi, beautifully sprayed with their own foliage; the flowers were very bright and fresh looking. The chief forms were Victoria, Grandee, Queen of Spain in grand form, Captain Nelson, Weardale Perfection, Sulphur Phoenix, Madame Plomp, Gloria Mundi, Madame de Graaff, very pure in colour, and maximus.

Messrs. Barr & Sons, Covent Garden, had an extensive display of Daffodils. The varieties and species most noteworthy were Madame de Graaff, Glory of Leiden, Ladas, Gloria Mundi, Weardale Perfection, Apricot, a remarkable colour, J. B. M. Camm, Emperor, W. Wilks, Mrs. Bateman, Princess of Wales, Barri conspicuus, poeticus poetarum, and Leedsi Beatrice; also Muscari, Tulips, *Erythronium Pink Beauty*, very attractive; and a small collection of rock plants.

Mr. Downes, gardener to J. T. Bennett Poë, Esq., Cheshunt, staged a very graceful display of Daffodils well displayed. The most noteworthy forms were Emperor, Madame de Graaff, Nelsoni major, grandis, Mr. J. B. M. Camm, Mrs. Langtry, and Lulworth. The Rev. G. H. Engleheart exhibited a collection of hybrid and seedling Narcissi. The majority of them were really beautiful and very distinct. The best were Sequin, Aigret, Will Scarlet, Moonlight, Garnet, Marina, and Diadem.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); and Messrs. J. O'Brien, H. Ballantine, de Barri Crawshaw, H. Little, J. Gurney Fowler, A. H. Smee, H. J. Chapman, John Gabriel, W. H. Young, W. H. White, A. Outram, T. Statter, H. T. Pitt, E. Hill, T. W. Bond, J. Colman, W. Cobb, T. Mason, W. H. Protheroe, S. Courtauld, and W. Thompson.

Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent a few Orchids of considerable interest. There were *Cirrhopetalum Colletti*, *C. Cumingi*, *Pleurothallis ornatus*,

Masdevallia O'Brieniana, with Dendrobiums crepidatum, micans giganteum, stratius and Nestor. Messrs. H. Low & Co., Bush Hill Park, Enfield, contributed a collection of miscellaneous Orchids, in which Cattleyas were conspicuous. W. Cobb, Esq., Tunbridge Wells, sent Odontoglossum triumphans, Dulcote var., and Cypripedium Goweri magnificum. Mr. F. Burton, Gainsborough, showed Cypripedium porphyrites, a hybrid of which the parentage is unknown. Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, sent some superb Odontoglossums, including polyanthum giganteum, excellens luteum, luteo-purpureum, sceptrum Stevensi Ruckerianum ocellatum, with one or two varieties of crispum and Lælio-Cattleya Hyppolyta aurantiaca.

Mr. S. Cook, gardener to de Barri Crawshay, Esq., Rosefield, Seven-oaks, was represented by a collection of Orchids, mainly comprising Odontoglossums. Of these the most conspicuous were Ruckerianum Rosefieldensis, triumphans Rosefield Emperor, Andersonianum Raymond Crawshay, A. Miss de Barri Crawshay, and nevadense. Mr. Bond, gardener to C. L. N. Ingram, Esq., Godalming, sent Lælio-Cattleya Sir Wm Ingram, and Mr. J. McBean, Cooksbridge, Odontoglossum excellens McBeanianum. Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, showed Cypripedium Thyades. Messrs. J. Veitch & Son, Ltd., Chelsea, staged Epidendrum elegantulum luteum, and Dendrobium crepidato-nobile. There were one or two other exhibitors of Orchids.

AWARDS.—Fruit Committee: Silver-gilt Knightian medal to Mr. G. Wythes, V.M.H. Orchid Committee: Silver Flora medal to de Barri Crawshay, Esq., and Mr. W. Stevens; and silver Banksian medals to Messrs. W. H. White and H. Low & Co. Narcissus Committee: Silver-gilt Flora medal to R. H. Bath, Ltd.; silver Flora medal to Messrs. Barr & Sons; and silver Banksian medal to T. S. Ware, Ltd. Floral Committee: Silver-gilt Flora medal to Messrs. Hogg & Robertson; silver-gilt Banksian medals to Messrs. H. B. May and Paul & Son; and silver Banksian medals to Messrs. G. Mount, G. Jackman & Son, and J. Hill & Son.

CERTIFICATES AND AWARDS OF MERIT.

Epidendrum elegantulum luteum (J. Veitch & Sons, Ltd.).—This is a charming flower with its bright yellow sepals and petals and a pure white lip (award of merit).

Narcissus Dorothy Kingsmill (A. Kingsmill).—A handsome variety of the large trumpet section. The perianth is white, and the long trumpet sulphur-yellow (award of merit).

Narcissus Cecily Hill (R. Backhouse).—This flower has broad creamy white perianth segments and a flat yellow crown edged with rich orange (award of merit).

Narcissus Hesperus (G. H. Engleheart).—This is a striking flower. The crown is very bright orange and the perianth cream (award of merit).

Narcissus Marina (G. H. Engleheart).—The segments are creamy, with a canary, very broad and open tube (award of merit).

Odontoglossum excellens McBeanianum (J. McBean).—A handsome variety. The yellow is very bright, as are the chocolate markings (award of merit).

Odontoglossum Andersonianum Raymond Crawshay (de B. Crawshay).—A very attractive form. The whole of the organs have numerous red spots on the cream ground save at the tips and at the margins (award of merit).

Odontoglossum Andersonianum Mrs. de Barri Crawshay (de Barri Crawshay).—This is a lovely Orchid. The sepals and petals are pale cream with occasional red spots. The lip is yellow with a large chocolate crimson blotch (award of merit).

Odontoglossum Ruckerianum rosefieldensis (de B. Crawshay).—The purple in this variety is very deep, and the spots effectively placed (award of merit).

Richardia (Calla) Pentlandi, Tring Park variety (E. Hill).—This is a superb variety of the richest yellow; the spathe is large sized with a reflexing edge (award of merit).

Richardia (Calla) suffusa (E. Hill).—The colour of this is soft cream with a deep purple throat (award of merit).

THE YOUNG GARDENERS' DOMAIN.

ASPARAGUS IN BEDS.

THE Asparagus is one of the choicest vegetables in cultivation, and it is grown, more or less, in every gentleman's garden. Not only is it valuable for outdoor culture, but also for forcing, and it is much appreciated when the young heads are sent to the table early in the year. When, however, it is produced in the open better heads and a sweeter flavour are insured. There are two methods of growing it outdoors. One is on a raised bed and the other on the level ground, and so far as my experience goes the former is much the better plan to adopt.

I had the good fortune to serve for five years under a very successful grower of Asparagus. We had six raised beds, occupying (alleys included) about 12 rods. Each bed was 4 feet wide, with 18-inch dividing alleys. They had been made upwards of twenty years, and the number of heads produced, year by year, during my term of service was wonderful. I am sure thousands must have been cut and taken to the kitchen each season, yet there was always an abundance of growth left to mature. The soil was of a rather light nature, though sufficiently adhesive to hold ample moisture. In the early spring about an inch of the surface soil of each

bed was raked off, so that the tender heads should have less resistance in coming through, and also that the warmth of the sun might more easily reach the plants. After this had been done a good sprinkling of salt was given for the benefit of the plants, and to help keep weeds in check. As the season advanced and the demand for supplies became greater the drainings from a cowshed were applied, afterwards giving a watering with clear water to cleanse the young growths. The beds were kept scrupulously clean from weeds by hand pulling, no hoe being allowed, as is sometimes the case. Several waterings with liquid manure were given during the summer.

As the autumn approached, and the growth reached maturity, the beds were thoroughly cleared. The ripened growth was cut off about 4 inches from the ground and burnt. Then the top soil, to the depth of the crowns (being careful not to injure them with the fork), was taken off and laid in the alleys; after which a good coating of farmyard manure was given and the soil replaced. In this operation the sides of the beds were chopped down, and made even and neat, as also were the ends. Our "chief" was very particular in having the sides straight, and as perpendicular as possible.

It was my privilege to assist in the work connected with the above mentioned beds (with the exception of making), and what I have here stated is as nearly as possible the way the work was proceeded with year after year. Our mode of cultivation may not correspond with others, but I consider it thoroughly good. I might mention that Lettuces were grown in the alleys—a row being planted down the centre. Thus as much space as possible was taken advantage of.—ASPIRANT.

WATERING.

I CONSIDER plant watering to be the most important operation done under glass. In some establishments youths are entrusted to do this work, and if a sharp eye is not kept on them woe betide four-fifths of the plants that come within reach of the waterpot. I would much rather see badly potted plants in the charge of a careful and competent waterer, than plants excellently potted in perfect compost under the care of an inexperienced youth. Very frequently plants that have been repotted are watered much too soon, which is a grievous error.

Let me give an illustration of my method of procedure. A short time ago I repotted several hundreds of Chrysanthemums that are intended to produce exhibition blooms, and I did not water them until eight days after, the syringe only being used. The plants were watered the night prior to their transference from 60's to 32-sized pots, and the soil used was just moist enough to handle without stickiness.

To emphasise my meaning I will quote another illustration of good and indifferently watered plants. I once saw a splendid collection of Bouvardias and Euphorbia jacquiniæflora deluged with water immediately after being repotted to 5-inch pots in July. The weather was somewhat dull and cold at the time, and the plants were in unheated frames—the only place available at the time. The result, of course, can easily be imagined. The new soil was so saturated that the roots refused to enter it. The plants lingered through the autumn, but refused to grow even when given a more genial temperature. They were an eyesore, and splendid examples of mismanagement.

On Sundays the watering is often scamped, and the plants have to pay the penalty. In some gardens the whole of the watering and syringing is done on this day by the duty man, the plants being probably heavily watered on Saturday afternoon to lighten Sunday work. The best method I have found is for each man to water his own charge on Sunday as on weekday mornings. The work comes much lighter for the duty man, or men, if the glass is very extensive. At one period I had a journeyman under me who was a very "dry waterer," if I may be permitted to use such an expression, and he was particularly afraid on Sunday mornings to give them too much "lotion," as he called it. He was watering at the time some bush Chrysanthemums, walking along the rows, and just giving each plant something less than half a pint, until I stopped him. This method of watering cannot be too strongly condemned, as it often deceives a practical man.—FOREMAN X.

FUCHSIAS.

FUCHSIAS are among the prettiest plants that are grown, as, although they are not very valuable for cut flowers, they have a grand appearance when covered with blooms. To obtain early cuttings, the old plants should be started at the beginning of the year, with a temperature of 60° to 65° at night, 65° to 70° by day; lightly syringe the plants twice daily with tepid water when the weather is bright, doing it early enough for the plants to become dry towards night. When the growths are about an inch in length they should be taken off so that a little of the old wood will be attached to them; carefully trim with a sharp knife, and insert around the sides of small 60's, about five in each pot, in a compost of equal parts of loam, leaf soil, and sand; give a watering, and plunge the pots in cocoa-nut fibre refuse in a house with a temperature of 65° to 70° at night, 70° to 75° by day, keeping them rather close for a few days.

When the cuttings are well rooted pot them singly in thumb pots, using a similar compost to that advised for the cuttings, give a watering, and afford them the same temperature. As the plants begin to grow and the roots take hold of the soil they should be removed to a cooler house with a night temperature of 60°; syringe them twice daily when the weather is bright, as this will keep thrips and green fly in check. When they have a fair amount of roots transfer them into 5½-inch, clean, well-drained pots, using a compost consisting of three parts loam, one leaf soil, and one sweet horse droppings, with enough sand to keep it porous, and a little of Thomson's Vine manure well incorporated. The plants should not be potted too deeply, but make the soil firm around them, place a neat

stake to each, and afford a temperature of 60° at night; keep the house rather close for a few days until root action has recommenced.

As the plants again begin to root they should be stopped if for bush plants, but for pyramids this must not be done until they have reached the desired height. When the plants are well rooted remove them to a house with a temperature of 50° to 55° at night, 55° to 60° by day. Do not in any way neglect the syringing at this stage on bright days. A little weak liquid manure will now be found beneficial to them, and as the plants gain vigour apply it stronger. Attend to the tying and stopping of the side growths when needed, as this will make compact plants; stopping twice will be sufficient unless they are required for late flowering. If old plants are potted and neatly tied they make a grand show if stood outside during the summer.—P. R.



FRUIT FORCING.

Vines.—*Early Houses.*—The Vines started at the new year have the Grapes in an advanced stage for ripening; some are commencing to colour, and will need a circulation of warm, rather dry air. An arid condition of the atmosphere, however, must be avoided, inasmuch as it is sure to induce an attack of red spider. It is imperative to keep the foliage clean and healthy for as long a period as possible. Where red spider has obtained possession prompt measures must be taken for its destruction. Recourse is sometimes had to the syringe, which, even when the water is clear and soft, is apt not only to more or less damage the bloom of Grapes advanced in colouring, but to leave a deposit on the berries greatly detracting from their appearance. Sponging the leaves is a safe means of preventing the spread of the acari, and taken in hand on the first appearance of the pests is not as tedious as it seems.

Houses of Ripe Grapes.—The earliest Vines have ripened their crops somewhat earlier than usual, are well coloured, and of excellent quality. Maintain a circulation of air, and allow the temperature to fall to 60° at night. The soil must be kept healthfully moist, so as to keep the foliage in good condition. Moderate air moisture is also essential to prevent the foliage prematurely ripening, and it benefits rather than prejudices the keeping of the Grapes, provided the air is not stagnant. The Grapes are liable to lose colour with hanging; a slight shade will be beneficial in helping to retain colour, especially in Black Hamburgh and Madresfield Court. A double thickness of herring netting, or a single thickness of pilchard netting, placed on the roof-lights is sufficient. It is also desirable, where it can be practised without crowding the principal leaves, to allow a moderate extension of the laterals, which will tend to promote root activity, and assist the Vines to recuperate their exhausted energies.

Muscats.—The Vines started in December and brought forward gently in the early stages are now beginning to colour. Muscat of Alexandria takes longer to colour than Madresfield Court and Black Muscat (Muscat Hamburgh), and the berries of Muscat of Alexandria are liable to shrivel unless the Vines are well supplied with water and nourishment at the roots. When these are provided a much drier condition of the atmosphere may be allowed than is otherwise safe, and it is absolutely essential to good finish in Muscats, for when in a saturated atmosphere there is danger of "spotting," and what is gained in size is lost in colour and quality. Directly the Grapes change colour give a thorough supply of water or liquid manure, following with a mulch of sweet, rather strawy material, a couple of inches thickness sufficing, and being dry it will prevent too much moisture arising, whilst keeping the soil moist. Muscat of Alexandria is liable to have the upper berries of the bunches scorched by the sun when the Grapes are ripening, which is due to the sun acting powerfully on the epidermis, whilst, perhaps though imperceptibly, covered with moisture. As a safeguard against scorching a slight shade should be provided, ventilating early, and increasing the air with advancing sun heat, but allowing a high temperature by that means. A little more time is required with the shade, but it well repays the outlay, as the losses from scorched Grapes are sometimes considerable where the panes of glass are large and when the weather is bright.

Muscats in flower set freely with a night temperature of 70°, 75° by day, and 80° to 85° or 90° with sun heat, always with a circulation of air. The points of the bunches should be kept well up to the light. When the caps of the flower are being cast, it is advisable to rap the bunches lightly, better still to gently go over each bunch with a camel's-hair brush and follow soon afterwards, or when the caps are off, with another brush laden with pollen taken from such free-setting varieties as Alicante, Black Hamburgh, and Foster's Seedling. The influence of foreign pollen is far more potent, and secures finer berries than impregnation of a variety of Grape or other fruit with its own pollen, which is often inert from continued in-and-in breeding.

Succession Houses.—Follow up the thinning of the bunches and berries, also tying, disbudding, stopping, and regulating the growths. Allow crops proportionate to the vigour of the Vines, and retain as much foliage as can have full exposure to light. Examine the borders at least once weekly, and when dry water freely, assisting those in full foliage and

carrying heavy crops with tepid liquid manure or top-dressings of fertilisers washed in moderately, mulching with an inch or two thickness of rather lumpy sweet manure. Well-drained inside borders will take almost any amount of water after the Vines are in full foliage, it having a hygienic as well as a moisture-supplying effect. Excessive watering, however, causes a soddened and sour condition of the soil which commonly results in shanking and bad finish. Ventilate early, it assists accumulated moisture to disperse, gives texture to the foliage and firmness to the wood, besides securing a full amount of stored matter. Allow a high day temperature from sun heat, closing early, alike to push ahead the crop and to store the sun-warmed atmosphere. At night a temperature of 60° to 65° is best, especially for Vines carrying heavy crops.

Late Houses.—Disbudding, also tying and stopping the growths, must be attended to as they become sufficiently advanced. Every advantage of sun heat should be taken to increase the ventilation early in the day, and of closing early in the afternoon, as a means of securing a long day's work, and of vigour and health in the Vines, dispensing with fire heat as much as possible, yet employing enough to keep the Vines in steady progress. Make selection of the bunches that are to remain for the crop, large ones, especially loose, being the worst for finish, and the medium-sized and compact the best for perfecting properly and keeping. Crop lightly rather than heavily, and apportion the crop to the vigour and variety of the Vine.

Late Hamburghs.—These and other summer Grapes will have started naturally, and require disbudding, tying down, and regulating, not leaving more growths than can have space for the full expansion of the foliage. In stopping allow two, preferably four, joints of growth beyond the show of fruit, and pinch the laterals below it to one joint as made, but above the bunch allow them to extend so as to insure an equal covering of the space with foliage that can have exposure to light; afterwards keep them pinched to one leaf as new growth is made. Where the space is restricted closer stopping may be practised, not allowing the laterals to interfere with the principal leaves. Ventilate early and freely so as to insure short-jointed stout wood and thick leathery foliage. Avoid a saturated condition of the atmosphere, yet a genial state must be provided by syringing the borders, walls, and paths in the morning and at closing time. Have the borders properly moist, yet avoid saturating them, and encourage surface roots by a light mulching of lumpy material.

THE KITCHEN GARDEN.

Borecole.—It is not yet too late to sow seeds of Borecole, though the most productive plants are raised and finally planted earlier. The seeds of Buda or Asparagus Kale may be sown during the next month or so thinly in drills 18 inches apart, where the plants are to remain, eventually thinning them to about 6 inches apart in the row. Thus treated excellent crops will be had next spring.

Broccoli.—Where space is limited and the ground has to be kept closely cropped, late raised Broccoli plants are the most reliable, not having time to become leggy before the ground can be spared for their reception. Sow the seeds in a sunny open position, either in drills 5 inches apart or broadcast. In showery weather dust over the young plants occasionally with soot and lime to save them from slug. Early raised Veitch's Autumn or other popular early Broccoli ought to be finally planted 24 inches to 30 inches apart on good ground before they weaken each other in the boxes or nursery beds in which they are pricked out. A pinch of seed may be sown with a view to having late plants for storing in pits next autumn.

Cauliflower.—Plants of Snowball and its synonyms in pits and rough frames should not be hard forced. Draw the lights off them on warm bright days, closing moderately early, and protecting with mats or litter on cold nights. When the hearts commence forming feed liberally at the roots. Treat those in hand-lights similarly. Plant successional stock at the foot of sunny walls and on warm borders in rich soil. The autumn-raised plants of Autumn Giant that are wanted to produce extra fine hearts next August should be put out on rich ground, and allowed plenty of room.

Cabbage.—If the breadths of Cabbage are not making such rapid progress as is desirable, draw soil up to the stems, and in the furrows thus made pour strong liquid manure. Or, if the weather is showery, sow nitrate of soda, at the rate of 1 oz. to the square yard, among the plants. Commence-cutting directly some of the hearts are fit, not waiting till they are hard, and from the stumps left good successional heads will result. Red or pickling Cabbage should have a rather long period of growth. Plant on good ground directly the plants are large enough for the purpose.

Lettuce.—Plants of Cabbage and Cos varieties should be put out every fortnight or so. In hot dry weather Lettuce transplants badly, and from this date onwards the seed should be sown where enough plants are to remain to form good rows. The ridges between Celery trenches are excellent positions for summer Lettuces. Sow the seed thinly in shallow drills 10 inches to 12 inches apart, covering with fine soil. It is worthy of note that Lettuce succeeds well on the ridges just alluded to without any addition of solid manure, but will fail, or make poor progress, on the level unless the ground is heavily manured.

Tomatoes.—Old plants can be made to produce good second crops, but these rarely equal those obtained from young plants. Those, then, now carrying heavy crops, some of which are already ripening, should be kept free of superfluous growth, concentrating the strength of the plants on the crops they are producing, with a view to increasing their weight. Sow more seed in May, and prepare strong plants for producing heavy crops next autumn. Plants carrying two or three clusters of fruit require abundance of water, and frequent supplies of liquid manure. The roots

of Tomato plants revel in rich top-dressings, but it is a safer and better practice to provide a bed of soil or ashes underneath, for them to spread their roots into. Those plants newly top-dressed with rich compost must have water supplied to their roots nearly or quite as often as previously. Pinch or cut out all superfluous side shoots as fast as they form, and reduce the leaves in size where they are crowded only. A warm airy house best suits Tomatoes. Keep the hot-water pipes warm all through the night, give a little air early on warm days, opening the ventilators as the sun gains in power. Reduce the air gradually, but do not close early enough to box up much sunshine, or disease will soon follow.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE changeable weather that has prevailed during the past month has been most disastrous to the bees. High winds, snow, hail, and rain have been general throughout the country. The temperature, too, has been below the average, which will account for the bees being confined to their hives for several days in succession. During the last fortnight of April, instead of the bright days which often prevail at this season, it has been dull, and altogether unfavourable for the bees to make much headway. Fortunately those stocks which received timely attention have advanced, though slowly; others that were left to chance appear to be no stronger than they were a month ago. This fact alone shows the advantage of attending to the requirements of the bees as often as necessary.

Warmth in the brood chamber is a necessity during the early spring months more than at any other season, and if the outside temperature is low steps should be taken to keep the interior of the hive as warm as possible. This can be done by placing some extra coverings on the top of the frames. Any warm material will have the desired effect, and should this not be conveniently to hand a good substitute may be found in paper. Place several thicknesses of paper on the top of the other coverings, then a piece of board, which may be weighted down with a brick. It is surprising the amount of warmth that may be obtained in this manner.

We cannot too strongly impress on bee-keepers the harm that is done by carelessly handling the bees at this season. The frames should not be uncovered, unless there is some definite object in view. Brood may be chilled in a very short time by lifting the frames out of the hive, and exposing it in a low temperature. Chilled brood, we are aware, is quite different from foul brood. But may not the latter pest be created by having a large amount of the former in a hive? We are inclined in this belief by observing foul brood in some districts where it was unknown previous to the introduction of the movable frame hive.

SUPERS ON HIVES.

In our previous notes we promised to revert to this subject again. It will be remembered, owing to the large amount of honeydew, much of the honey obtained last year was useless for commercial purposes. We therefore allowed several large supers to remain on the hives throughout the winter. The experiment was interesting, as showing what effect it would have on the bees. When examined in February, they were, without exception, in good condition. But contrary to our expectation we found that in the majority of the hives the bees were clustered between the frames in the body of the hive where there was little store left. We, therefore, decided to observe them closely in case they should suffer during a spell of cold weather in the spring.

During the past few weeks those stocks on which were single crates of sections and shallow frames were in better condition than those having full-sized frames in the supers. The only exception was in the hives where the bees had taken possession of the frames in the top storey, and had commenced brood-rearing there. This was what we expected, but we thought the majority of the colonies would have forsaken the lower frames so as to be nearer their stores. As this was not the case we placed them all in the bottom hive, the brood and the empty combs being placed in the centre of the hive, and some frames of sealed stores on the outside. A few square inches of the stores were uncapped. This had a stimulating effect on the bees. They were afterwards covered up warm as advised above. The uncapping of the sealed stores will be continued about every fourth day. This will have the desired effect, and should a change in the weather set in they will increase at a rapid rate; and although early swarms cannot be expected owing to the lateness of the season, they will doubtless give a good account of themselves when the honey flow comes.

If stocks are short of sealed stores continue to feed with thin syrup until natural supplies can be obtained from outside.—
AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Loose Gravel Path (O. F.).—Loose paths are very unpleasant, and we know of nothing but to secure some fine binding gravel and mix it with the present surface. This would not be a very costly proceeding; but perhaps you could not conveniently procure the article. Of course the rough stones can be raked off, but that will result in little improvement. We have sometimes found that turning the walk had a good effect, the rough being put under, and the fine brought on the top.

Annuals Round Fruit Trees (Scotland).—As the circles have been mulched with manure or saturated with liquid manure, any of the annuals, provided there is not too much shade, would probably succeed. Some most likely are:—Sweet Alyssum, white; Cape Marigold, Meteor, lemon striped silver; Candytuft, dwarf hybrid, rose; Candytuft, Empress, white; Cornflower, Victoria, blue; Eschscholtzia crocea; Leptosiphon aureus, yellow; Lupinus nanus, blue; Mignonette, dwarf erect; Nemophila insignis, blue; Poppy, dwarf French; double Jacobæa, and Venus' Looking-glass, blue.

Weevils (C. C. E.).—The specimens you have sent are very good examples of the clay coloured weevil, *Otiorhynchus picipes*. You wish to know their vices and virtues. We know their vices well enough, for they will eat almost any living vegetation, both under glass, in the form of Vine leaves and Fern fronds, and outdoors by feasting on the tender growths of Raspberries and Roses. In the larva state they eat the tender roots of various plants. Their virtues, perhaps, rest in affording food for something else that we do not know, and in quickening the activities of growers of plants and fruit in catching the depredators as you are doing. They are best seen after dark with the aid of a light when on their foraging expeditions.

Apple Twigs Eaten just Below the Pruning (Manse).—The Apple twigs have had the bark eaten off just below the pruning and on the side of the buds, but without injuring them. The gnawing, though only very slight, has been going on for some time, as some portions are brown, and others quite white, indicating recent attack. There are no insects, and the flies to which you allude do not gnaw but suck. Probably the animals are the stem-borer weevil, *Rhynchites Alliarie*, a very handsome creature, deep blue with a greenish tinge. It loves the Apple tree, and has probably found the sap "up" at the points of the shoots and got a start on the newly forming cellular tissue. Look very early in the morning or at night with a lantern, and you may possibly see the culprits. Or place a smear round the stem on a grease-proof band and the creature may transfix itself, though it does not often do so, but it certainly will not cross the sticky substance.

Eruptions on Under Side of Vine Leaves (A. W.).—The leaves have been microscopically examined, but no form of vegetable or animal parasite has been detected. The warts are considered to arise from a sudden depression of temperature or drying of the atmosphere by giving air in large amount at one time, and after the sun has raised the temperature considerably and increased the expansion, if not quantity, of air moisture. That such will give rise to warting, and even to scorching, every gardener well knows; but there are cases where "the eruptions on the under side of Vine leaves" cannot be so accounted for, and this appears your case, the Vines otherwise being vigorous and healthy, and the bunches quite free from the warting, or, as some term the leaf affection, rust. We have made careful observation of the phenomenon, and find that it proceeds from the stomata or breathing pores, where there is a thickening of tissue and abnormal growth of cells, which in some cases partake of the character of bark and dies, giving the leaves a semi-scorched appearance. We have noticed similar appearances on outdoor Vines and other broad-leaved plants, and for these no reason appears except chill, which may be, and probably is, the cause of the warting. But the fact remains, that where every possible care is taken in ventilating the warting occurs, and this rather points to excess of sap or development in too close and moist atmosphere. The pseudo-bulb is probably a species of *Dendrobium*.

Patent Crocks (Crocker).—We presume you refer to the wire crocks which were advertised in our columns some time back. They are manufactured by Mr. A. Porter, Stone House, Maidstone, from whom they may be procured.

XL All and Grapes (X. Y. Z.).—We are not able to say, from actual experience, whether Richards' XL All would hurt by fumigating the berries of Muscat of Alexandria Grapes, which are just stoning. Perhaps some Grape-growing reader who has tested the matter will oblige by giving the desired information?

Newly Planted Vines (Amateur).—When the Vines have taken to the soil, as will be indicated by their growing freely, ventilate early in the day, as the value of the growth is dependent more on its sturdiness and solidification than on its length and sappiness. Encourage laterals rather than mere elongation of the cane, but let that extend and retain all the foliage that can have exposure to light. That is desirable where the Vines are weakly; but if they are vigorous it is a better plan to pinch the laterals at the first joint, and to one leaf of subsequent growth, stopping the canes at 9 to 10 feet, and allow the uppermost to grow a few joints, and then keep all closely pinched. If the cane break into two growths cut away the worst.

Apple Tree Buds Destroyed by Birds (A. Z.).—The shoots are not, at least so far as we can discover, infested with insects, or are the buds in anywise affected with parasites. The birds take the buds solely as a source of food, and the delinquents are mostly bullfinches, especially in secluded positions. There are many palliatives, such as syringing the trees with hot limewash—that is, freshly burned lime slaked in the water, and formed into a consistency suitable for applying with a syringe, at once when the trees are quite dry. The limewash is not easily washed off by rain, and birds certainly do not relish the buds of trees so treated. The petroleum emulsion and the caustic soda and potash solution are useful, especially the latter, but it must be applied whilst the trees are quite dormant, and not after they are advanced in swelling their buds, which is the time when the birds mostly take them, especially of Apples and Pears. The gun is the best remedy. Trapping in early winter lessens their number, but in wooded districts is not sufficiently effective, but it is easy to use birdlime and a call bird to make a diversion in favour of the trees during the spring months. The petroleum emulsion may be used after the buds commence swelling, but duly diluted.

Tomato Plants with Drooping Disease (W. J. B.).—Yes, the stems are affected by the drooping disease fungus, *Fusarium lycopersici*, and certainly in the plants submitted it has gone over in the seed, as the roots are perfectly free from the parasite, only the radicle and root stem, with the stem above ground, being affected. No external application, therefore, would be of any use, unless such as to strike the disease plasma as soon as exposed by the germination of the seed. For this reason lime has a deterrent and often a fatal effect on the parasite, as it does not like this element, about 2½ per cent. of best chalk lime being mixed with the soil some time in advance of using, mixing with the lime some kainit—namely, 1 per cent. The kainit should be applied several weeks before the crop is planted, and the compost chopped down evenly and mixed thoroughly before use. This has been found effectual, so far as the soil is concerned, but there remains the passing over of the fungal plasma in the seed, and that can only be overcome by saving seed from perfectly healthy plants, never from a tainted stock. We have known bad cases greatly bettered by careful seed selection and the use of half the quantities of lime and kainit to the soil, the disease dying out or taking its departure.

Various Plants (J. C. S.).—*Euterpe edulis* is a stately Palm, growing to the height of 100 feet in Brazil, and requires a warm house for its satisfactory cultivation. The leaf you send is *Dasylicon acrotrichum*, an evergreen plant from Mexico, which succeeds in a not too cold greenhouse. Both *Gasterias* and *Haworthias* resemble small *Alces*, to which genus of Liliaceous plants they are closely allied. *Gasterias* have mostly red and *Haworthias* grey flowers; they are greenhouse plants, and require very little water during the winter. They are often seen with, and admired by, lovers of quaintly formed Cactaceous plants. By all means try them, and let them have abundance of sun in the summer and much more water than in the winter. Avoid very rich soil and needlessly large pots. *Kleinias* (also called *Cacalias*) are of excellent growth, the species varying greatly in character. *C. articulata* is commonly called the "Candle Plant," from its articulated candle-like stems. A plant called *Kleinia repens* (*Senecio succulentus*) is used in carpet bedding because of its blue tinted, fleshy growths. All the *Kleinias*, as well as the Liliaceous plants named, like crushed lime rubbish in the soil, and to be kept somewhat dry in the winter. They are more curious than beautiful greenhouse plants. *Pistacia Terebinthus* is a deciduous tree grown in Southern Europe, Northern Africa, and Asia for the Cyprus turpentine it yields. It attains a height of 20 feet, and has pinnate leaves. It will grow very well in the same kind of soil that you would use for *Fuchsias*, and would be as well out of doors as in a greenhouse during summer. We are obliged by your reference, and like to be helpful when we can to any of our readers. We do not regard searchers for knowledge as "troublesome," but rather as helpers in eliciting information that is often acceptable to others besides the querists.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as

to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. A., jun.*)—1, *Sempervivum chrysanthum*; 2, *Lychnis coronaria*. (*Daff.*)—Daffodils must be included within the category of florists' flowers, and, as such, can only be named by comparison. Your best course would be to send specimens to one of the several specialists, who no doubt would gladly assist you. (*G. C.*)—1, *Prunus (Cerasus) padus*, the Bird Cherry; 2, *Arabis alpina*; 3, *Aubrietia purpurea*; 4, *Iberis corneifolia*. (*L. W.*)—*Lycium europæum*.

COVENT GARDEN MARKET.—MAY 3RD.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ...	1	3	Lemons, case ...	30	0 to 60 0
Grapes, lb. ...	1	6	St. Michael's Pines, each	2	6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0 0	Mustard and Cress, punnet	0	2 to 0 4
Beans, ½ sieve ...	0	0 0 0	Onions, bushel ...	3	6 4 0
Beet, Red, doz. ...	1	0 0 0	Parsley, doz. bnchs. ...	2	0 3 0
Carrots, bunch ...	0	3 0 4	Parsnips, doz. ...	1	0 0 0
Cauliflowers, doz. ...	2	0 3 0	Potatoes, cwt. ...	2	0 4 0
Celery, bundle ...	1	0 0 0	Salsafy, bundle ...	1	0 0 0
Coleworts, doz. bnchs. ...	2	0 4 0	Scorzoneria, bundle ...	1	6 0 0
Cucumbers ...	0	4 0 8	Seakale, basket ...	1	6 1 0
Endive, doz. ...	1	3 1 6	Shallots, lb. ...	0	3 0 0
Herbs, bunch ...	0	3 0 0	Spinach, pad ...	0	0 0 0
Leeks, bunch ...	0	2 0 0	Sprouts, ½ sieve ...	1	6 1 9
Lettuce, doz. ...	1	3 0 0	Tomatoes, lb. ...	0	4 0 9
Mu. hrooms, lb. ...	0	6 0 8	Turnips, bunch ...	0	3 0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2	0 to 3 0	Lily of the Valley, 12 sprays	0	4 to 0 10
Asparagus, Fern, bunch ...	2	0 2 6	Marguerites, doz. bnchs.	4	0 5 0
Azalea, white, doz. bnchs.	3	0 4 0	Maidenhair Fern, doz.		
Camellias, per doz. ...	1	0 2 0	bnchs. ...	6	0 8 0
Carnations, 12 blooms ...	1	6 3 0	Narcissus, doz. bnchs.	1	0 2 0
Daffodils, single yellow, bch. 12 blooms ...	0	6 0 8	Orchids, var., doz. blooms	1	6 9 0
Daffodils, double, bunches	0	4 0 6	Pelargoniums, doz. bnchs.	4	0 6 0
Eucharis, doz. ...	2	0 3 0	Roses (indoor), doz. ...	2	0 3 0
Freesia, doz. bnchs. ...	2	0 3 0	„ Red, doz. ...	2	0 4 0
Gardenias, doz. ...	1	0 2 0	„ Tea, white, doz. ...	2	0 3 0
Geranium, scarlet, doz. bnchs. ...	4	0 6 0	„ Yellow, doz. (Perles)	2	0 3 0
Hyacinths, Roman, bunch	0	4 0 6	„ Safrano, doz. ...	2	0 2 6
Lilium Harrisii, 12 blooms	3	0 4 0	Smilax, bunch ...	2	0 3 0
„ longiflorum, 12 blooms	4	0 6 0	Tulips, bunch ...	0	4 0 6
Lilac, bunch ...	3	0 4 0	Violets doz. bunches ...	0	6 1 6
			„ Parme, bunch ...	2	6 3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36 0	Ficus elastica, each ...	1	0 to 7 0
Aspidistra, doz. ...	18	0 36 0	Foliage plants, var., each	1	0 5 0
Aspidistra, specimen ...	5	0 10 6	Lilium Harrisii, doz. ...	24	0 36 0
Crotons, doz. ...	18	0 24 0	Lycopodiums, doz. ...	3	0 4 0
Dracæna, var., doz. ...	12	0 30 0	Marguerite Daisy, doz. ...	6	0 8 0
Dracæna viridis, doz. ...	9	0 18 0	Myrtles, doz. ...	6	0 9 0
Erica various, doz. ...	9	0 24 0	Palms, in var., each ...	1	0 15 0
Euonymus, var., doz. ...	6	0 18 0	„ specimens ...	21	0 63 0
Evergreens, var., doz. ...	4	0 18 0	Pelargoniums, scarlet, doz.	8	0 12 0
Ferns, var., doz. ...	4	0 18 0	Solanums, doz. ...	6	0 12 0
„ small, 100 ...	4	0 8 0			



BUTTER FROM THE ANTIPODES.

ENGLAND has many fair jewels in her crown—some jewels which have become hers at bitter cost, the cost of good men's lives; some that she has been obliged to take, to save them from themselves, from the despotic government of men worse than savages; and some that have come to her peaceably and quietly, the fruits of the adventures and hardihood of her sailors.

We are a restless people, never long content with our present position—in fact, our circumstances are such that we cannot be. The limits of our island home are too restricted—we have not scope here for our energies and desires. If we as elders settle down quietly at

home, there are always scores of younger sons who fairly burn and pant for a life of greater activity than can be found in the counting house or shop.

In days of old the simple country people believed the streets of London to be paved with gold. In these modern days gold is still the cry, whether of African origin, S. Australia, or the distant Klondike. But there are other motives that drive men, quite as potent as the gold fever—it is the lust of land; some stake in the country, some spot where to reign lord paramount. It is partly for the sake of possession, but also in great measure for the sake of the pleasant outdoor life, the fascination of rural sights and sounds, and perhaps in the far background the desire to demonstrate the possibility of making farming pay. We all have a sneaking fancy that we can excel our neighbour if we only really tried.

If in days of old Canaan could be looked upon as a land of flocks and herds, a truly pastoral country, surely to-day the same may be said of vast tracts of S. Australia. Shepherd kings, indeed! Well, here are shepherd kings in all truth, and alongside of the sheep may be seen the countless herds of well bred cattle, descended from the bluest of blue blood.

Imported bulls and dams have been used without a single thought being given to the great price paid for them in the old home country, or the great expense and risk of the long sea voyage. We know something of the expense, and we can guess at the risk. The colonials were wise in their generation, and knew that the best article was the cheapest in the long run. They have had their difficulties and their losses—many and heavy. They have met difficulties with perseverance, and losses with fortitude, and have ever been ready to seize and adopt new and improved methods if they could see in them at all ultimate profit. In a country like Australia, where the population is scanty, and the agricultural resources without limit, we cannot be surprised to learn that food products are both plentiful and cheap.

The question has been how to convey the superfluous food to those countries where the need was greatest, and where there was an open market. With beef and mutton the question was partly solved by the tinned trade, but with the bye products—milk and butter—there apparently seemed no means by which they could reach the far distant consumer.

However, now the difficulty appears to be at an end. We have received a paper which treats of the dairy factories of S. Australia, and shows how the work is growing and increasing. The increase is by giant strides. Once well made and carefully packed, butter and cheese will bear a great amount of travel without detriment, and the mother country will do well to be fed from her colonies, rather than from Danes or Dutchmen.

“Co-operation” is the watchword, and we find that “in Sydney the produce agents have formed themselves into a number of companies, each embracing a distinct sphere of action. Each company has a large butter factory established at some convenient point, generally at some river port, with creameries in suitable localities in the surrounding district.”

The farmer, instead of worrying himself and his family with dairy works, takes off his milk to the nearest creamery, sells it according to its intrinsic butter value, and has done with it. There is a monthly settlement, and he also may possibly be at the same time a participator in the company's profits. By doing his cows well he can increase the value of his milk, as it is paid for on the butter fat basis rather than on the quantity. As the factories are replete with the best and newest appliances, even to those used in pasteurising milk, every care is taken to make the butter as near perfection as possible. The products are carefully packed, and find their way to the home markets. This leaves the farmer free to turn his attention to other parts of his business; it does away with the employment of expensive labour (butter makers and dairymaids always require top figure in the matter of wage), and suitable offices.

We quote again, “On March 31st, 1898, there were in N.S. Wales 181 butter factories, 294 creameries, 18 cheese factories, 9 butter and cheese factories, 2 butter, cheese, and bacon factories, making in all

502 establishments, but during the last year the increase has been considerable. In 1897-8 the quantity of butter made was 29,409,966 lbs., of which 23,713,509 lbs. came from the factories, and 6,526,673 lbs. found its way chiefly to English markets. In 1886 the exports only reached 58,047 lbs., thus showing how quickly the trade is developing. We fancy it has a great future. The cows are there, the pastures are there, the go-ahead man is there too, and the capital wherewith to make a start.

Would that we could see something on the same lines in our rural neighbourhoods; but it is the old story repeated. Children may be taught new ways, their parents never. The young blood of the colonies is full of energy and life, it is not bound down by traditions of the past, but is ready to strike out new paths and try new methods.

WORK ON THE HOME FARM.

We are still having showery, not exactly to say wet, weather; the land, therefore, remains on the wet side, and current work is only performed with difficulty. A good May month should be a dry one, so we must hope that the weather will take up and give us a taste of summer.

Much rolling remains to be done, Bailey in particular is not growing as it should, the nights are too cold for it, and a crop which makes slow progress is always more liable to the attack of wireworm. Many fields show signs of wireworm now, and rolling must be done as soon as the weather will allow. A good heavy roll must be used, and the surface must be dry.

Farmers do not like to see a shed full of useless implements, but a spare roll is often brought into requisition when it is available, both in spring and autumn, and it is not an easy thing to borrow, for the neighbour who might be willing to lend is generally finding plenty of work for his own.

The sheep must now be removed from the mowing seeds if they are still on them, and here a good rolling will do much good. It will not only consolidate the Clover roots, but level the inequalities of the surface, and make a better track for the grass mower. Loose stones of any size must also be carted off. On limestone formation, stones of large size are often brought to the surface by the plough, and if not removed are a frequent cause of broken sections and fingers, if not of worse damages.

It will soon be time to drill a few early Swedes. Heavy soils, in which Swedes do not grow very rapidly, may be drilled any time after May 7th, if the tilth be satisfactory. A great point is to use good, new seed, not cheap rubbish or what has remained over from last year; and another point is to choose a fine warm day for the drilling. Sunshine must go in with the seed, and if there is none, then wait for it.

OUR LETTER BOX.

Malt Culms (N. B.).—We have no experience of these for the purpose you name, but we do not see why they should not be good for laying hens in the proportion you name, one part to three of meal. To your other question we can give no answer, though we should say it would be excellent for fattening chickens, being rich in nitrogen.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. April.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.	
Sunday 23	30.277	48.4	42.3	S.	45.2	53.9	41.6	89.5	36.0	0.049	
Monday 24	29.850	51.5	46.8	S.	45.9	57.4	45.0	85.2	42.3	0.304	
Tuesday 25	29.491	51.7	50.7	W.	46.7	59.2	46.6	106.1	45.6	0.240	
Wednesday .. 26	29.563	50.7	45.9	N.W.	47.0	56.7	42.2	102.4	37.9	—	
Thursday .. 27	29.943	52.7	48.1	N.E.	47.1	57.2	44.0	91.2	38.6	0.031	
Friday 28	29.891	52.9	51.7	W.	47.9	62.8	47.3	81.2	43.0	0.010	
Saturday 29	29.688	54.8	51.0	W.	4.90	60.6	49.9	101.8	44.1	0.023	
	29.815	51.8	48.1		47.0	58.3	45.2	93.9	41.1	0.662	

REMARKS.

23rd.—Frequently sunny in morning, with halo; cloudy afternoon; rain from 7 P.M. to midnight.
 24th.—Overcast early; faint sun about 11 A.M.; drizzle from noon, and steady rain from 2 P.M. to 8 P.M.
 25th.—Overcast with frequent rain early; frequent rain after 11 A.M.; heavy rain between 8 and 9 P.M.
 26th.—Rain in small hours; occasional bright sun in morning; overcast and dull from 2 P.M.
 27th.—Generally overcast, but some sun in morning; fine night.
 28th.—Overcast day, showery early.
 29th.—Alternate sunshine and showers.
 A dull week, with average temperature and rather more than average rainfall.
 —G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, MAY 11, 1899.

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READY FOR THE QUEEN.

WHEN her Majesty was journeying from the Continent on Wednesday, 3rd inst., to her magnificent home, one of the many millions of the Queen's loyal subjects was running down to Windsor. He was there in time to see the 1st Life Guards come trooping in by road from London, but that was not the object of his visit. The country is inviting when the days are bright and the spring still young, and in searching for an excuse for a day out of town the happy thought arrived—Why not go and see the Royal Gardens when ready for the Queen?

The question was settled by a few quick electric flashes, and the writer was forthwith speeding onwards to the rendezvous. The best way to Windsor depends on the point of departure. If you are at Paddington you may reach the Royal borough in a little over half an hour; but if it take you an hour to get to Paddington it is a case of going a long way round for the shortest way there, that is if you happen to be near the South-Western line, in which case the longer route is, in the matter of time, the shorter, as it is for over most of the way the prettier, especially at this season of the year.

Reaching Putney from Waterloo we are on the fringe of a land of blossom. In the gardens on each side are pyramid Pears clothed in pearly beauty. Onwards through Barnes to Mortlake fleecy orchards come within the line of vision. Nearing Richmond we have Carter's trial grounds on the left, now neat and trim, but soon to be gay in many colours. Passing the orchards of Twickenham we come to the latest of the many Veitchian establishments—a new nursery of trees, on the right, at Feltham. This appears to be very much a land of fruit plantations, old and new, and we have not far to look for mountains of blossom till reaching Staines.

Here we swerve to the right and the scene changes, for we enter the flat, low meadows, that reach to the winding Thames. Willows are here the most familiar trees, with groups of Lombardy Poplars towering above them in spires of tender green. Passing Datchet, the wooded slopes of

No. 2641.—VOL. C., OLD SERIES.

Windsor come into view, with the great Castle rising above them. Nearer and nearer we are drawn towards it, but the train sweeps on as if leaving it behind, yet suddenly it takes a half-circular turn to the left, and we are brought as if within a stone's throw of the wonderful north terrace on its rocky bed high above the tops of the loftiest trees on the slope and in the foreground; but where all is so vast, distance is deceiving, and the visitor will find something of a walk or a climb before he stands on the level above, which a few moments before seemed so near.

But when the climb is over and the terrace reached, whether it be up the "hundred steps" (much nearer 200), or by the longer route round St. George's Chapel, and the atmosphere is clear, all will be forgotten, save the majestic building on the one hand and the glorious view on the other. It is as if taking a bird's eye glance of a vast pleasure ground extending over many square miles, the bright green fields between the trees resembling lawns, with the Thames winding its way in serpentine curves to the west till lost in the distant blue-tinted hills. The royal mistress of this regal home of British monarchs has during her wondrous career witnessed many scenes in Nature of entrancing beauty—scenes of grandeur in rugged cliffs, in heath-clad hills, in snow-capped mountains, and flowering slopes skirting southern lakes and sunny seas; but for quiet, pastoral, placid, restful beauty, of the true home type, it seems hard to conceive that even the Queen has viewed a fairer scene of its kind than this, when the light is of the best for revealing its peculiar charms.

ORNAMENTAL.

A few steps onward and nature in a large degree vanishes, and art is the dominating feature, for from the eastern terrace we are looking down on the fine semicircular flower garden, bounded by its castellated wall. This garden is essentially a work of art, with its fountain, statuary, neatly kept choice shrubs and Conifers, beds of Heather, and smooth lawn brightened with masses and lines of flowers. This is her Majesty's flower garden, overlooked every morning in the direction of the rising sun. The beauty of the enclosure is shared by the public, who have access to its great curving terrace walk on regular occasions, and Queen, princes, and people enjoy at the same time the flowers and the strains of one of the famous military bands. The flowers, now so bright and cheerful, are such as any cottager may grow—large masses of clear yellow, crimson, and particoloured Wallflowers; rich lines of the flower well named "Gold Dust," *Alyssum saxatile compactum*; long margins of rosy tinted double Daisies; sheets and lines of purple Aubrietias; creamy white masses of fine and floriferous *Polyanthuses*; bright blue Forget-me-nots, with groups of Daffodils here and there, and Pansies in the foreground. It is an enlivening floral scene, a beautiful setting to the well kept Hollies and other shrubs that are permanent features in the beds. And how easily all the flowers are raised, and none more easily than the dainty Daisies, for by sowing seeds now in the open, and treating the seedlings naturally, any number of fine plants may be raised to be clustered with flowers next spring. By its smooth lawns and paths, and closely clipped edgings—in a word, by its faultlessness in order, this garden was, as if assuming a smile of welcome, ready for the Queen.

From this eastern terrace, and curving gradually southwards, a drive leads through the Home Park on to the great walled supply gardens at Frogmore. In passing along it was pleasing to see how well every tree of some sixty *Cupressus atlantica glauca*, planted in June, 1897, was thriving. They are about 35 yards apart, and are destined to form a beautiful and lasting memorial of the unparalleled event they were intended to commemorate—the Diamond Jubilee of Britain's illustrious Queen. On asking Mr. Thomas what reason he had for feeling certain these trees would flourish in their position, he pointed to a noble specimen of a Cedar of Lebanon, and remarked, "That tree was planted by Mr. Ingram during the Queen's reign." The reply was conclusive. The matter had been well thought out, for where the Lebanon will thrive the Mount Atlas Cedar will flourish.

USEFUL.

The supply gardens are reached under a canopy of blossom—the branches of standard Pears being densely clothed from base to extremity; but we enter the houses first—or, at least, some of them, for to pass through all and along all the paths must surely mean a walk of a mile. What must arrest the attention of every visitor must be not only the thorough order and cleanliness prevailing, but to see how completely every structure is fulfilling its purpose. House after house of Vines, and every house giving its quota of Grapes, just such as are and will be wanted throughout the season. Duke of Buccleuch is bearing as heavily as any other, Madresfield Court colouring, Muscats and other late kinds advancing, and many little known and grown varieties flourishing in a young state. The foundation is laid for the most complete collection of Grapes in Britain, and it will be a wonder if varieties not yet seen have their birth at Frogmore. As with the Grapes, so with the Peaches and Nectarines, every tree in every house in the richest garb of health, and laden with fruit—not a failure to be seen. Cherries in abundance, ripe and ripening; Figs the same. Grand crops of Melons, many noble fruits of a new variety of the Beechwood type having been cut during the past three weeks, others ripening, and other ranges coming on. Strawberries Royal Sovereign and La Grosse Sucrée laden with handsome fruits, the crops from hundreds of pots exactly in to time, and others of the 10,000 grown following in order, to the later planted in pits for meeting the outdoor supply—a case of Strawberries under glass during the first six months of the year. As to Pines, it may be said in a sentence that nowhere are more to be seen or better than at Frogmore.

A word may be crowded in about vegetables, and perhaps a few about flowers, if the pen hold out and the patience of the reader should happen not to be exhausted. Peas, then, there are in abundance, sturdy plants heavily bearing in pots. Kidney Beans apparently by the bushel, and certainly Potatoes by the sack, ripe and ready for the great demand. Tomatoes in bountiful supply—the new plum-shaped Epicure, as great a favourite in its way as the well proved Frogmore Selected. A houseful of Cauliflowers in 6-inch pots, advancing to the heading stage, is not seen everywhere. Small tender heads of these are for the Royal table in lieu of the bigger Broccoli that go elsewhere. Asparagus forcing is over. What a demand there must be for this coveted vegetable, since half a mile in length of 5 feet wide beds have been planted this year for maintaining the supply; and so we might go on, but as a stop must be made somewhere in this section, it shall, as our affectionate brothers in the "States" would say, be made "right here."

But mention of the outdoor fruit must not be omitted. Peaches and Nectarines on walls are admirably managed, and their blossoms judiciously protected by movable blinds. It may be said that crops of these fruits rarely if ever fail. This year fruit is over-abounding, and not an insect to be seen on the trees. These are usually dressed with an insecticide before the blossoms open—an old and admirable practice. Apricots are less plentiful than Peaches. Plums and Cherries are setting in profusion. Pears are in full beauty, the branches densely packed with flowers—millions too many—and Apples will be much the same when the blossoms are expanded. The branches of bush Apples and free informal pyramid Pears are from 2 to 3 feet apart, each a cordon of spurs the entire length. No summer pinching is needed here, for the light and air act directly on the basal leaves of the summer growths, and hence the fruitful branches down to the main stem; in fact, where the branches are very thinly disposed, large trusses of flowers push directly from the central stem, and there is good promise that more than 90 per cent. of the trees in this great garden will be laden with fruit, but the haven of surety is not reached yet.

BEAUTIFUL.

As might be expected, the chief display of flowers was in the conservatory, and some of these were in preparation for the Castle. This means that whenever groups are wanted in the Royal apartments they have to be formed in the garden—every plant in its place to occupy the desired space, and thus the final arrangement is quickly done. The Lilac is one of her Majesty's favourite flowers, and a beautiful group of densely flowered plants of the familiar old colour,

with a few Arums interspersed, was being set up for subsequent transference, as indicated. Among the striking flowers in the conservatory were a number of Cinerarias of the "cruenta hybrids," the plants ranging from 18 inches to 3 or 4 feet high, with heads up to 2 feet in diameter of various self and parti-coloured miniature flowers—a home-saved and improved race, suggestive of small-flowered Michaelmas Daisies, but far richer and more varied in their several hues. Effective the plants unquestionably are, and the flowers for cutting are found most valuable. Many plants of the bright yellow *Celsia Arcturus* sparkled among Azaleas, Lilacs, and most other kinds in season; and the nearly 200 feet long sidestage presented a sight—well, certainly "fit for a queen." On the other side of this long building is a "dead" wall, against which nothing seemed to grow to give it life. It was a happy thought to plant in a border at the foot a row of slender Bamboos, and another row on the opposite side of the parallel path. They are luxuriating in the shady abode, and soon will be an elegant Bamboo border the whole length of the structure—a welcome change from the flowers on the other side.

Stove plants and Orchids, worthy as they are of admiration, must be passed without reference, save in the case of a consignment of the last named family. One house is occupied with Orchids sent to her Majesty by an Asiatic Prince from Burma. There are some 500 of them, and it is not easy to imagine the plants could have made a better start into growth in their native habitats. They are perfectly happy in their new home, and it will be interesting to watch and wait for developments.

The view from the long terrace walk in front of one of the great ranges of glass is, though over the kitchen gardens, at present chastely beautiful because of the blossom. This broad, smooth, newly-gravelled walk, with its side lawns, Conifers and balloons of Roses, is one of her Majesty's favourite drives to the conservatory. Not only is this fine promenade in the highest imaginable order, but every path and quarter and corner would bear close inspection. All seemed ready for the Queen; and all who had joined in work so well done, from the directing mind of Mr. Owen Thomas, his skilled foremen, and their bands of workers, would rejoice in the return of the Gracious Lady whom they are so proud to serve, for her Majesty's kindness and thoughtful consideration towards her servants of all grades is proverbial, and duty on their part is a pleasure and work—an exercise of love.

AMONG THE FLOWERS.

"The spring is here—the delicate footed May,
With its slight fingers full of leaves and flowers."

So sings the American poet Willis, and now that spring has in reality come, we can rejoice in its presence. Late as it has been, it is as welcome as in years now gone. The hedges and trees, so long bare, are clothing themselves with their charming leaves—never more beautiful than now, when, as it were, they are in their youth. Yes, the time wearied for is here, and we enjoy its manifold pleasures to the full. If we seek the woods we see the fresh green leaves above, and the bonnie Wood Anemones below. If we seek the fields they are spangled with Daisies, while the mossy banks are bright with Primroses.

But it is the garden's delights we seek to explore, great as are those of the outer world beyond. Many and sweet are these delights. The Daffodil has come late, and in consequence we are, as this is written, in full enjoyment of its gracious presence. On the heels of the trumpet varieties have followed those of the incomparabilis and poeticus sections, and these have caught up with their earlier sisters. Emperor and Empress are in the heyday of their beauty, and quite a number of the shorter cupped varieties are in their fullest charms. Grandis is not yet open, but preticus præcox grandiflorus has given us its clear white flowers and scarlet ringed cups. One cannot weary of looking at their flowers, or of admiring their impressive delicate loveliness.

In brilliant beauty have come "The courtier Tulip gay in clothes," as Fanshawe calls this other flower of the season. If, as Quarles says, "the fairest Tulip's not the sweetest flower," we can afford to overlook this fault because of the companions it brings whose fragrance is enough for our needs. If the Tulip has not perfume, and some few species have, the Wallflower can supply us with the sweet fragrance we want. In the garden of hardy flowers the Tulip with its gay colouring has its defects hidden and its beauties multiplied by its association with other herbaceous flowers. These give it the greenery it demands in addition to its own broad leaves.

As yet there are few open but the brilliant flowers of the early Dutch varieties. Exquisite are many of these, such as the delicately beautiful La Laitière, with its white flowers flushed with azure blue, the bright rich scarlet and yellow Keizerskroon, the fine yellow Canary Bird, the carmine-rose Proserpine, and the various coloured dwarf Duc Van Thol varieties. Later one may write of some of the species yet to bloom.

Owen Meredith tells us of the Anemones; he says:—

"The large-eyed Windflowers forlorn, too,
Blow among it unbeholden:
Some white, some crimson, others
Purple blackening to the heart.
From the deep Wheat sea which smothers
Their bright globes up, how they start!"

They are not "unbeholden" in the garden now, for those cups and globes of brilliant or of delicate colouring given by the Poppy Anemones cannot well be overlooked. They are hard pressed to hold their own when the early Tulips are afield, but they compel our admiration both by their colour and their form. The writer has been so fortunate as to have some tubers of the true St. Brigid strain, which, now that "St. Brigid" in her present garden cannot grow the Anemone so well, is being kept to its high standard by the Rev. F. C. Hayes of Raheny, Dublin. For many years this strain has been in the writer's garden, as it has been offered by the trade; but there are more plebeians than one could wish among the patricians of the race. "There is a black sheep in every flock," is a familiar saying; but there are not many inferior flowers among the Raheny St. Brigid Anemones. From almost white to purple and blue and crimson, with parti-coloured blooms, they are very beautiful indeed.

We admire *Anemone stellata* also, but its flowers look thin and poor beside those raised by the gentle lady who has so dainty a little garden in the Emerald Isle. If the Poppy Anemone has superior beauties to the starry Windflower, what can we say for the Wood Anemone? It is, as Shelley calls it, "fair and frail;" but though it is "frail" its fairness and delicate beauty make it as welcome in our gardens as the massive, brightly coloured flowers of the allied race. Bright are its varieties:—*A. Robinsoniana*, *A. cœrulea*, and *A. purpurea*, which look so well by the mossy stones of the rock garden.

"Streaked and banded" are the Fritillarias, but they are strangely liked by those who see them. Some few, of which *F. aurea* and *F. Bornmulleri* may be cited as examples, are bright in colouring, but by far the greater number are flowers not to be looked "at" but "into." We need to peep into their ball-like flowers to see their chequerings, their quiet colourings, and the glossy polish with which so many of them are so daintily finished. A small collection gives much pleasure now.

Before they wither away before the summer sun, one may well say a word or two in praise of the Grape Hyacinths. How few in many districts know these, it seems almost sad to think. People will spend their money on the flowers of autumn, but how many do not heed the flowers of spring! One would not unduly disparage the gems which give us our autumn's joys, but it is brought home to one again and again that the wealth of floral beauty spring can give our gardens is unrealised by the many. If they want little cones of blue and white, clustered heads of sweet little flowers, hardy as the Daisy or the Dandelion, let them buy a few *Muscari* in autumn, and when spring comes round they will not regret their purchases. For a bit of bright blue there is *M. botryoides*, for another there is *M. conicum*, and for a lighter colour and a smaller flower there is *M. Szovitsianum*. There are many more, but none more pleasing perhaps than those. But time speeds and space is limited, so "hasten" must be the motto call to move the pen.

Sheets of Aubrietias—red and pink, and blue and lilac, and mauve—keep company with the white Arabis. White and yellow, and pink and red, and blue Primroses and Polyanthus brighten up border and rock garden and roughish nooks. *Primula* species, sadly thinned by the past unfavourable winter, are in bloom. *Primula Sieboldi* in variety is just opening. In the rock garden it has grown into clumps, which want thinning out. Violas begin to give us many flowers, though nearly all their fragrant sister Violets are past and gone. Great sheets of Candytufts will more than rival the Arabis in whiteness, and will give us their snowy blooms when the other has lost its beauty for the year. There is *Erica mediterranea*, with its bead-like flowers; and Mr. D. S. Melville, of Poltallock Gardens, kindly sent some beautiful sprays of *E. australis*, to show its worth.

Crown Imperials and the simple Honesty stand tall among so many dwarfer flowers, and rock garden shrubs, such as the lovely *Cytisus præcox*, become gay and bright. Near by *Kerria japonica* fl.-pl. is crowded with its yellow Chrysanthemum-like double blooms, and Forsythias have not yet quite passed away.

Adonis vernalis opens its flat golden flowers on its shaggy, rough looking foliage, which is, however, as soft as it looks spiny. *Dentarias* (now merged into the *Cardamines* botanically) are pleasing, and sheets of Mossy Saxifrages grow white or purple, as the case may be.

Truly, as the poet says, "Fair-handed spring unbosoms every grace." To the youth the future is always distant and hoped for, but to many of us the sweet time of spring, with its flowers, will pass too quickly away. Summer and autumn have their garden graces, but none is fairer, none more fascinating, than the gentle blossoms of the sweet time of early May.—S. ARNOTT.

FRUIT PROSPECTS ROUND EVESHAM.

PERHAPS you may be able to cull some information from the enclosed report from the "Evesham Journal" of a meeting of some of the old Evesham Fruit Pests Committee at Toddington on Thursday last. The trials of the spraying machines were most interesting, but so far as insect pests were concerned they were conspicuous by their absence. My opinion is that the intense frosts in March settled the bulk of them, and the later frosts the bulk of the Plum crops.—J. HAM, *Astwood Bank*.

"Looking to the future there is a great deal of misapprehension as to the Plums. In the low-lying grounds the frost has done much damage, and taking the Evesham gardens all through, two men who are qualified judges place this year's crop at twenty-five, taking 100 as the average. If this should prove to be correct it will be a poor outlook for those gardeners who place most of their reliance on the Plums, but we hope it will not be found to be the case, and we are the more strengthened in this hope by the fact that other growers place the probable yield much higher—more like fifty. As is generally the case, the frost has behaved in a capricious manner, doing much injury in some grounds, and leaving others untouched.

"The early Plums, Prolifics and Czars, seem to have suffered most, and some of those that flower early, such as the Monarch, which does not come into the market till later, have also been touched. In some of the gardens there is scarcely a Plum left that is good for anything, and in some cases the cold weather has so checked the sap that the leaves on some of the boughs are withering just as if hot water had been thrown over them, and the boughs, when you break them off, are brown just where the sap runs. This is particularly the case with some Victorias we saw at Pershore, and the same thing has occurred in some of the Toddington plantations. Egg Plums were a good bloom, and generally they seem to be setting well, but in some of the plantations they are a good deal cut up, and so are the Victorias, though in favourable situations the prospect is fair. The Damascenes seem to have suffered as severely as any. In some places there are scarcely any left, and some of the growers will be in the position of a well-known Evesham man, who has some ground at Hampton, and who some years ago carefully placed a single Plum in the middle of a pot hamper, and exhibited it to admiring crowds as his crop for the season. Unfortunately, though the season is bad enough so far, the worst is not yet apparent. When the Plums are stoning, and about the size of Hazel nuts, we shall see a good many of them fall off, and this will still further thin an already thin crop. However, we must hope for the best. A very heavy crop does not always pay the best, and perhaps the small yield of the present year may not be such an unmixed evil as some people would have us believe.

"As to bush fruit, Gooseberries are practically the only ones that anything need be said about. Here again our pessimistic friends place them at a quarter of an average crop, but other growers say they were not hurt much, and will be a fairly good crop. This divergence of opinion may be attributed to the difference in the situation of the gardens, for, as is always the case, some of the gardens have escaped comparatively lightly, while others have suffered severely, and possibly those who take the worst view of things have seen most of the bad gardens.

"With regard to insect pests, they are not so apparent as they have been in many past years. Thanks to the investigations of the Fruit Pests Committee, the gardeners now know how to deal with them better than they did some eight or ten years ago, and the difference in the gardens is most marked. The general adoption of the practice of grease banding for the winter moth has resulted in a great diminution of the caterpillars on the Plum trees, and the aphides and other pests are not doing the damage they did in previous years. Red spiders are still a source of trouble, but they are got rid of without very much trouble by spraying with quassia and softsoap, soda, and other preparations. They are mostly seen in the old plantations. The Gooseberry caterpillar, too, has not been seen lately. Whitewashing the bushes in the winter to keep the bark clean and healthy is found an excellent remedy. In one of the Wyre plantations the thrips are found this season in considerable numbers.

"Speaking of Wyre reminds us of Mr. George Eccles' Apple plantations. Mr. Eccles is a great believer in Apples, and he says there is a great future before Apples as a paying crop. The Yankee growers have, he thinks, had their day, or pretty nearly so, for the English growers are beginning to see that there is money in the Apple tree, and when we state that Mr. Eccles made last year from 8s. to 10s. a pot for his Apples we can quite believe that there is in them a line that the growers in this neighbourhood would do well to take advantage of. Compared with other fruits it costs very little to pick them—about 1½d. per pot, and there is always a good demand for decent Apples. Last year Mr. Eccles put on the market some large Apples that made 1s. 6d. a peck, which is about 1½d. or 2d. each. He only grows choice sorts, on Paradise stocks, and treats them

well. Shoddy, soot, and certain other artificial manures, with a dressing of lime, are found very useful.

"Some of his Newton Wonders last year made 2s. a pot more than the Blenheims, and he has a row of Peter the Great, an early table Apple, which last year were heavily laden. His Apple plantation, which consists of some 1500 trees, looks very well this season. He grows them between the standard Plum trees, and finds they do very well on rather heavy land. He does not care very much about Lord Suffield. For early varieties he recommends Potts' Seedling, Ecklinville Seedling, and Lord Grosvenor.

"Mr. Eccles is a Tomato grower also. This year he is putting in 9000 or 10,000 plants, and he prefers the Early Ruby to the Early Evesham. Last year he grew the French variety, known as the Chemin. This is really an indoor variety, but last year he found it answered well out of doors with the others, and improved the sample. He does not sell his Tomatoes on commission, but sends them direct to the shops, nicely packed in 12 lb. baskets, and all the defective ones carefully picked out, so that in a ton there is hardly a pound of bad ones.

SPRAYING AT TODDINGTON.

"At the Toddington gardens on Thursday afternoon we witnessed an exhibition of spraying machines. We were first shown a washer designed by Mr. Wise and built by Messrs. Weeks & Co. of Maidstone. This machine is drawn by a couple of horses, and consists of a tank for the insecticide, and so geared to the wheels as to throw a strong spray from four nozzles held by as many men. There is an interchangeable action which enables the machine to be worked over Strawberries or between Raspberries, for spraying Plum trees. This should prove very useful for grass orchards, or plantations where there is no bush fruit between the Plum trees, but in the Evesham gardens it would not be much use, as it could not be got between the rows of Plum trees with any facility, and in some cases not at all.

"The principal event was an exhibition with a new steam sprayer made by Messrs. Merryweather & Sons, the well-known fire engine people of Greenwich Road, London. This is a far and away the most efficient washer we have seen. It consists of a portable steam pumping engine of about six horse power in connection with a system of iron piping, which is laid along the top of the plantation as a main. The piping is in convenient lengths, each length being fitted with a piece of flexible anti-caustic hose at each end, and quick-hitching gun-metal couplings. A number of tee pieces are provided, each with flexible hose and couplings, and in work these tee pieces are connected between two lengths of pipes. Each tee piece has a cock attached, and by means of breechings, lines of hose pipe can be led away to supply jets or sprays. This system of pipes can be laid down between the rows by a few men in a very short time, and enables the washing to be done rapidly and thoroughly, there being no small hand pumps to be filled with insecticide. The insecticide is mixed in a tank placed on the ground alongside the engine, and is pumped continuously into the portable pipe system. Each man has a long jet pipe with a spray nozzle, and a cock is fitted to each pipe, so that any of the jets can be shut off independently.

"The engine and boiler is very light, and the pump is of rustless gun-metal, with copper air vessels and gun-metal pipe connections. It is fitted with a patent injector for keeping the boiler supplied with water, as well as with a lever hand pump to fill boiler when starting work. An important feature is that one or the whole of the sprays may be shut off at once without stopping the engine, a special by-pass valve being fitted from the delivery to the suction pipe, and thus the man in charge of the engine can keep one or the whole of the jets supplied at an even pressure. By means of this apparatus a large number of trees can be sprayed in a very short time, and sprayed very effectually too, for each man can spend as long as is necessary at each tree or bush; he has no weight to carry about as in the knapsack pumps, and there is no time lost in filling the tanks. For standard trees the nozzle is held on the end of a cane, and the tops and hearts of the trees can be dealt with. By an arrangement of the valve the strength of the solution can be adjusted to a nicety.

"We doubt whether it would pay a man with a small plantation to buy one of these sprayers, but for large growers it certainly seems the most efficient thing in this line that has yet been put on the market. The engine can also be used for pumping water and watering plantations in times of drought, for driving light machinery, such as chaffcutters, and as a fire engine in case the owner should be so unfortunate as to have a fire. The engine is very small for the horse-power it develops; it is fitted with a tubular boiler so that steam can be got up in a very few minutes, and it seems to be fitted in every way for the work it has to do. Mr. Maryon, Messrs. Merryweather's representative, was present, and very courteously explained all the details to those present. The apparatus has not been on the market long, but where it has been tried it has proved most successful."



EPIDENDRUM ELEGANTULUM LUTEUM.

IN the spring of 1896 Messrs. J. Veitch & Sons, Ltd., staged at one of the meetings of the Royal Horticultural Society *Epidendrum elegantulum*, for which they received a first-class certificate. This was stated to be a hybrid from *E. Endresio-Wallisi* and *E. Wallisi*, and it was greatly admired. Following this up the same firm sent to the Drill Hall on Tuesday, May 2nd, *E. elegantulum luteum*, and received for it an award of merit. The flower as shown in the engraving (fig. 85) is of chaste beauty, and attracted the attention of all visitors. The colour of the sepals and petals is clear yellow, and that of the beautifully fringed lip pure white.

MASDEVALLIA SHUTTRYANA.

THERE is probably not a more handsome *Masdevallia* in cultivation than this beautiful hybrid, and an especially fine form of it was shown recently at the Drill Hall from the celebrated Burford Lodge collection. It was a plant carrying about a dozen flowers, and rarely has a more interesting exhibit in this section been staged. The Orchid Committee gave it a first-class certificate, which everyone agreed was well deserved, for the plant was a magnificent one, to say nothing of the fine variety.

It was labelled Chamberlain's variety, and was raised in the Highbury collection, the parentage being *M. Shuttleworthi* and *M. Harryana*, both handsome species. The flowers are intermediate in shape, and very distinct, the long curving tails being bright yellow at the tips, shading off to a deep magenta tint, this being continued over the broad part of the sepals, the bases of which are spotted with brownish purple. The dorsal sepal is yellow, with markings of purple, the lip white. The splendid habit of these hybrid forms is very noticeable, this one being a really fine grower, though one at least of its parents is not noted for robustness. It may be mentioned that the original type of *M. Shuttryana* was raised at Burford in 1892.

DENDROCHILUM GLUMACEUM.

This, when well grown into a fine specimen and well flowered, is one of the most beautiful Orchids in cultivation, the long arching racemes of yellowish flowers hanging about the plant like "gold filagree work chains." These occur upon the forming growths, and occasionally the plants are checked by being kept in a cool dry house to conserve the flowers. There are few plants that are exposed to moister conditions (in their habitat) than these, for a distinguished French traveller who has seen them growing *in situ* remarks that they grow attached to the tree trunks from 6 feet to 12 feet high, the forests in which they are found being so damp that for nine months in the year leeches live there as if they were terrestrial.

This being so it is obvious that a drying at the time when the growths are barely formed must be a serious check, and anything of this kind is bound to bring insects in its train to the further detriment of the plant. Their epiphytal habit points to the fact of little being needed in the way of compost, and when grown in pans for suspending, these ought to be almost filled with drainage, just the top inch or so being made up of clean sphagnum moss, peat, and charcoal. While growing freely give ample root moisture, but when the plants are at rest only sufficient to keep the pseudo-bulbs plump is needed.—H. R. R.

CATTLEYA CITRINA.

THROUGHOUT the sixteen years during which I have grown this plant, it has always been a kindly grower. Its "personal attractions" are so great, and its habit of growth so curious, that I had said if ever I grew an Orchid it should be *Cattleya citrina*. So it came to me from the first, in spite of assurances that it would be "bad to do." Why it has done well I hardly know, beyond that I fell in love with it at first sight, and watched its ways.

I saw by the marked preference its roots have for getting away from coverings of any kind that an almost naked raft suffices for it, and that any kind of material in decay is an abomination. The plant must be attached in its own peculiar position, which, to the eye, looks like an upside down one. But as the rich heavy flower is pendent, and no water must lodge between the leaves of young growths, the natural position of head downwards is at once the easiest and the best. The young foliage is thus placed thatchwise, protecting its own heart, and "turning water" as perfectly as a *Nasturtium* leaf surface does.

However, in giving water by dipping the plant, it is possible that some may be held back, where young leaves meet; and if only a "bead" or two be retained among them, then one or more ruinous

black spots are likely to appear, which will eventually destroy the whole leaf, unless the affected parts are cleanly and entirely cut out. Syringing might do, if the water could fall like a tropical rain; but the squirting charge is apt to scatter and lodge a few water-pellets in a young heart. Whichever way is adopted, the plant should be well shaken to dislodge any water from between growing leaves, which will often, with misplaced confidence, conceal it.

On the flower stems of *Cattleya citrina*, twin blossoms are generally proposed, but not very often carried out. If a pair get a fair start in life together—i.e., leave their bract simultaneously, each may live to be a flower (if the plant has health and strength); but a bud, with a trifling lead, will increase it so fast that the other one soon gives up in despair. The plant rests awhile after the flowering period, which, with a fair number of plants, is with me a very extended one, though they all grow together in one house the year round.

I never grew *Cattleya citrina* in a cooler than a full *Cattleya* temperature. It is a decided grower through the winter with me



FIG. 85.—EPIDENDRUM ELEGANTULUM LUTEUM.

and I did not think that, at periods of active growth, it would be best pleased with a winter residence in a low degree of warmth.

The plants are kept as close to the glass as possible, and as long as any roots are active I do not entirely withhold moisture. *C. citrina* is very moderate in its requirements in this respect at its quiet times, but I have never allowed the pseudo-bulbs to shrivel. Neither can I say from experience that it will not flourish in a cool house, and it is only in response to a kind invitation from the Journal for correspondents to say what they have done with *Cattleya citrina*, that I make bold to state my way with it.—F. D. HORNER.

BROCCOLI.

IN a season when green vegetables are scarce, the value of good quarters of Broccoli can hardly be over-estimated. Snow's Winter White, for instance, is one of the most useful, filling the breach after the autumn Cauliflowers are past. It is hardy and good, with a medium sized nice white curd on stems about 18 inches high. Only too often the Snows sold, especially by local seedsmen, grow nearer a yard in height, and either they do not show a curd at all, or we get one about 2 inches across late in the season, when better varieties are in. There are plenty of good midseason sorts that will keep up a succession from quite early in the year until the end of April. Two capital ones are Vanguard and Safeguard, the former being earlier than the latter, but not so hardy. Eclipse may be grown where medium size heads are required, and though after the end of April Broccoli is hardly needed, if there is room for growing hand-light and frame Cauliflowers, there are many places where conveniences do not exist for the purpose.

I grow a large number of late Broccoli, and two of the best I have tried are Methven's June and Late Queen. There are few more useful

vegetables than the latter where a large demand has to be met with limited accommodation, for it is dwarf and compact in growth, very hardy, and never turns in until quite the middle of May. Methven's is even later, but not so large or distinct, and therefore not so much to be depended upon.

With regard to transplanting Broccoli much misconception exists. By all means prick out the plants if room can be found for them, but when they have been pricked out they must not be drawn again and planted with a pin or dibber. This does away with many of the best roots, while those that remain are crowded and cramped into a hole not large enough for them. Drills should be drawn, and after well soaking the plants they should be carefully lifted and planted out with trowels. I never dig the ground for Broccoli; it follows whatever crop is on the ground, with no more preparation than a light hoeing and raking. When Strawberries are grown on the three-years principle, no better place than the old beds can be found, simply hoeing off the Strawberries and planting direct.—H. R. RICHARDS.

BLACKBERRY CULTIVATION.

I WAS pleased to see Mr. Luckhurst's note on Blackberry cultivation in your issue of last week (page 355). I fully agree with him that this is a much-neglected fruit. I am also at one with him in the conclusion that one great reason of its having failed to establish itself in the favour of the public is that most people look upon it as a common fruit unworthy of a good situation and fair cultivation, in fact it is usually relegated to the coverings of rough rockeries, banks, or any out of the way corner; but I think a still stronger reason is that many people class the Parsley-leaved Blackberry, *R. laciniatus*, amongst the American Blackberries, so many of which have been tried and found wanting, and thus condemn all alike, without giving our English friend a trial.

It is, of course, known to many that the Parsley-leaved is a British variety, having been found many years ago as a chance seedling in a bed of pot plants at Handsworth Nurseries; but this knowledge cannot be too widely diffused, for, to tell the truth, most of us are a little sick of American berries of all kinds, and to call our friend by this title is with many to condemn him at once.

I do not know why our climate does not suit the American Blackberries, but certainly no one on this side the Atlantic has succeeded in growing fruit to equal the photographic reproductions which induced us to buy these much-belauded berries. I must confess that I have sometimes wondered whether the photographic art over there was in advance of ours. We have now tried a great number of these berries, and one has to confess, when asked by intending planters what are their merits, that they are small from a practical point of view, however interesting they might prove at a hybrid conference.

There is the Japanese Golden Mayberry, which one bought on Mr. Burbank's recommendation, coupled with a most taking illustration of the fruit. I am the more sore about this, because we imported a good many and sold them freely, and if our customers' experience with them is no better than our own, we are doomed to a considerable share of abuse, either outspoken or otherwise. The first year the plants were imported late, and were very small, but last year we expected great things, when lo! the spring frost cut all the young growth, and no fruit appeared; and now, having grown some fine plants, the March frosts this year have killed them back to the ground; this, like the Japanese Plums, is evidently not for us.

Then, again, take the Strawberry-Raspberry; it is certainly a very pretty border plant, and whether in bloom or fruit interesting and attractive. But as a fruit—well, the blackbirds disregard it; and I need say no more. These same judges are not keen about tackling the Blackcap, and I agree with them there. As to the Loganberry, whilst it may prove useful for jam-making—I think it will, but it needs a good deal of space, and I fear many people will grudge the land it requires. Last year we had a hedge of the Parsley-leaved Blackberry growing alongside these other fruits, and one could fill a small basket with the berries without moving one's feet, added to which the flavour was such that all visitors, whether feathered or otherwise, passed by all others in their favour.—A. H. PEARSON, *Chilwell, Notts.*

[We gave prominence to Mr. Luckhurst's notes because of the splendid crops of fruit we have seen of the Bramble under notice, chiefly in gardens around Sheffield, and because Mr. Luckhurst pointed out the cause of many failures, also of the method to pursue to establish robust and fruitful plants of the English Parsley-leaved variety. The late Mr. Woodcock used to grow bushels of splendid fruit for Mrs. Firth near Sheffield, the plants being trained over tall trellises and arches. They produced ten times more fruit than could be obtained from Raspberries, however well grown, while the value of the Blackberries was enhanced by coming into use when all other berry fruits were over. They made fruiting canes from 10 to 15 feet long, which were laden with huge clusters, amounting to bushels of fruit. The Parsley-

leaved ought to have been named the Handsworth Giant Blackberry, as it is distinct from and far superior to *Rubus laciniatus*, which is, we think, of American origin, but of this we are not certain. We have known many failures in establishing fruitful plantations simply because the canes were not cut down for at least two years, or until robust growths issued from the ground. When they do and the soil is rich and deep, the crops are prodigious, but weakly growths from mismanaged plants in poor dry soil are very disappointing.]

HYDRANGEAS.

WHEN we remember that thousands of young plants of *H. hortensis* annually find their way from the premises of the trade growers to the various markets, and thence to the many homes of individual buyers, one is tempted to wonder what the final resting place of such numbers must be. When dwarf Hydrangeas are produced, as our best market men can grow them, the plants are objected to by some persons because the great whorls of inflorescence give the idea of top-heaviness, but notwithstanding this objection I think that such plants will long remain public favourites, as they are distinct from all others, and remain effective over a considerable period.

Hydrangeas are easily propagated from cuttings by selecting stout young shoots in the early part of July, trimming off the lower leaves, and making a smooth clean cut, so that the stem may rest on a firm base when inserted in the soil. We have found it the best plan to insert the cuttings singly in 2½ or 3-inch pots, rather than a greater number in those of larger size. If placed in a close frame in a warm house they emit roots quickly, though they are not slow in doing so in an ordinary Cucumber frame if shaded from the sun. Some growers transfer the small plants to slightly larger pots, and give another remove in early spring if found necessary, but others have found the method of wintering the young plants in small pots, and shifting them into 5 or 6-inch sizes in February, perfectly satisfactory. Thousands are grown in the manner indicated, and a saving of time and space effected.

Some growers insert sturdy cuttings taken from old plants in the spring, and if the growths thus selected have bold buds in their points the plants flower the same season, but the greater number, and, as a rule, better plants are obtained by late summer propagation. After flowering, and the removal of the old decayed trusses, the plants after hardening are stood in the open air during the summer months. If large specimens be required, they can be had by growing them in suitably sized pots in a substantial compost of loam with a small proportion of decayed manure. If the loam is very heavy, an admixture of leaf soil and sand may be advantageous.

Old plants of *H. hortensis* stand the winters in the southern parts of the kingdom, if during very severe weather a covering of litter or bracken be placed over them and the pots are plunged in ashes. In the growing season water is required in abundance, with liquid manure occasionally. The variety Thomas Hogg, which has been deservedly recommended for forcing, should be grown. The flowers are white, freely produced, and may be had early in the season. I have found this form to succeed very well by the method of planting out in summer and lifting again in autumn, in the same manner as is often practised with Callas. The treatment otherwise may be identical with that of *H. hortensis*.

H. paniculata and its companion, *p. grandiflora*, are usually regarded as outside border plants, but with cool treatment in pots they are extremely useful for house and conservatory decoration. *H. p. grandiflora* associated with *Tritomas* in the foreground of shrubberies combine in forming a splendid floral picture, the long pendulous trusses of the Hydrangeas contrasting most happily with the glowing spires of the "Red-hot Pokers," and both are effectively displayed by the background of shrubs. In localities where the soil and climate are favourable, *H. hortensis* assumes the form of large permanent bushes out of doors, and when covered with trusses of varied tints forms the grandest of summer flowering shrubs, which materially add to the beauty of gardens and pleasure grounds.

Much has been written from time to time as to the best method of producing the blue tint of colour in Hydrangeas. In some soils the flowers are blue, more or less intense, the soil then contains iron. Where it is not present a solution obtained by steeping iron filings in water and given to the plants, has in some instances assured the desired result, but there have been disappointments. The Hydrangea does not appear to have many insect foes, green fly on the young growths appearing to be the most troublesome, and this is often caused by too much heat and too close an atmosphere. As frequent and copious supplies of water are necessary when the pots are full of roots, it is wise to stand them in saucers, as otherwise it is obvious that much of the fertility of the soil would be washed away. Let the water that collects in the saucers be imbibed by the roots; then, and not till then, give more to the soil to pass through to be collected again, and Hydrangeas will flourish.—J. SHALFORD.

APPLES AND AMERICAN BLIGHT—FRUIT TREES ON "OWN ROOTS."

HEREWITH I send extracts from a letter received this week from Mr. Palmer, Auckland, New Zealand. Mr. Palmer and myself are quite strangers, except that we both belong to "The Journal" brotherhood, and I think it very kind of him to write me such an interesting letter. I scarcely need say I have written thanking him and accepting his offer of cuttings, and shall get them worked. If we can only get one good all-round variety to resist the "blight," and at the same time be a good stock to work others on, it will be the very "finest Apple on earth" (vide Merryweather). Some parts of Mr. Palmer's letter are omitted, as they are substantially the same as his letter in the Journal of March 30th last.—JOHN ERTLE, *Weston-super-Mare*.

EXTRACTS FROM MR. PALMER'S LETTER.

I was much interested in reading your letter in the *Journal of Horticulture*, December 22nd, 1898, especially that portion on American blight. I have been a resident in the North Island of New Zealand for upwards of forty years, and from my first landing have taken great interest in fruit culture and horticulture generally. When first I came to this country very few of the Apples grown would resist the American blight for any length of time, both root and branch being covered with it. I turned my attention to finding a remedy, but could not succeed. The great difficulty was with the roots. Noticing the Irish Peach Apple was not attacked, I thought if I could get it on its own roots, and still find it clean, it would answer for a stock, and the greatest difficulty overcome by having the roots clean, using something on the branches that would keep the aphids in check for the time being. I found the Irish Peach, as far as the roots were concerned, to answer, but it was not a very suitable stock, especially for strong growing varieties.

About this time a gentleman, Mr. Lippiatt, came out from the Old Country and brought with him a number of Apple and other fruit trees. After they had been planted some time the Apples were attacked with the blight, root and branch. But amongst them one variety remained perfectly clean as far as the branches were concerned, but the stem below the graft and the roots were attacked. The variety was the Northern Spy, and I believe the first of that variety brought to New Zealand.

I procured some grafts from Mr. Lippiatt and grafted them on pieces of roots of the Irish Peach. Most of the grafts grew strongly, and on taking them up at the following planting time we found that all the grafts had thrown out a mass of fibrous roots from themselves, which at once convinced me the Spy would be a suitable stock for other varieties of Apples. This happened about thirty years since. About that time, Mr. Laing, I think, of Ballarat, Australia, discovered that the Winter Majetin Apple was also a resistant variety, and propagated it largely. I obtained some plants from him, but owing to its strong, straggling, fibreless roots, I have discarded it as a stock. Shortly afterwards, someone in Australia discovered the Spy, and found it the better stock, and I believe to-day no other is generally used in that country.

I know how difficult it is to introduce any change into old countries, nor have I any interest in recommending the Spy as a stock, further than trying to benefit others. Some years ago I was accused by one of the correspondents of the Journal with sinister motives in so doing. The writer said that my motive in recommending it was that I was aware of its unsuitability for the English climate, and if its use was adopted it would leave an opening for the Australian grown fruit. Seeing that our seasons are opposite to your own, and at the time our fruit reaches you your markets are generally deficient, I cannot see where his remarks apply.

I also see in one of the Journals a controversy about fruit trees on their own roots. Few people have tried more experiments in that way than I have, and I feel sure it is a subject that wants more ventilating. By grafting or budding we force a plant to grow on a root that may not be congenial to it, whereas on its own roots it adapts itself to circumstances, producing roots according to its nature. I am not making this statement without foundation, as in numerous instances I have found it to be correct.

The two best Pear orchards of which I know, the trees are growing on their own roots, having originally been worked on Quince roots and planted rather deeply, below the junction. Last winter during a gale of wind one of the largest trees blew over. There was no sign of tap or deep penetrating roots, yet the land was a rich alluvial deposit. The original Quince roots were still alive, but did not appear to have made much progress. Last year from this Pear orchard, some three acres in extent, about £300 worth of fruit was sold. I know of numerous fruit trees on their own roots doing and bearing better than the same varieties alongside grafted on foreign roots. I am not setting it down as a hard and fast rule.

There is another thing I would like to mention with respect to Apples and the woolly aphid, and that is the raising and selecting of seedling varieties that are not subject to attack. I think I could

select at least twenty seedling varieties that are perfectly free from attack, most of them of superior quality. If you would like a few cuttings I should be glad to send you some. Leaving here in the month of June they reach England in the budding season, when, by taking off a very thin slice of bark with the bud and inserting it as it is in a free growing stock, very few will fail to grow freely another season. A short time since I received clean cuttings from Messrs. Bunyard & Co. I inserted buds in the way mentioned, and many of them have shot, nor do I see a failure. Should you feel interested in what I have written, I shall be much pleased; also if you will take the trouble, shall be glad to hear from you in the meantime.—W. J. PALMER, *Government Pomologist, North Island, New Zealand*.

[We are very much obliged to Mr. Ertle for his letter and enclosure. Mr. Palmer's interesting letter was written some time before he penned his communication on "Northern Spy Apple for Stocks," which appeared on page 258, March 30th of the present year. We are gratified to know that many friendships have been made through the "brotherhood of the Journal," and not a few of many years' duration and mutual advantage.

Mr. Palmer is evidently a close observer, and quick in turning suggestive hints to account. Finding no American blight on the branches of the "first tree of Northern Spy Apple brought into New Zealand" from England, but "the stem below the graft, also the roots attacked"—i.e., the stock supporting the clean Spy, he commenced experiments, with the eventual result of the Northern Spy becoming the generally used stock in New Zealand, because from some scientifically unexplained, yet very practical, reason the varieties established on it were free from attack by the ruinous woolly aphid. We may perhaps hear more from Mr. Palmer on this subject.

On another point in Mr. Palmer's present letter we should like to dwell for a moment. Though we do not remember a writer in our columns stating that "Mr. Palmer was aware of the unsuitableness of the American Spy" (as a stock presumably) "for the English climate, and if its use was adopted it would leave an opening for Australian grown fruit" in English markets, we have no hesitation in saying that such a sentence, having regard to existing facts, now represents nothing more or less than a case of "antiquated diplomacy."

We do not know an English fruit grower worthy of the name who deplors the importation of Australian Apples when he has no fruit of his own; but we do know of home growers who purchase the Australian produce readily enough, and would be rather sorry than otherwise if it were not obtainable. As a matter of fact, the most skilled of British fruit growers are wisely adapting themselves to circumstances more and more, and troubling themselves less and less about importations from anywhere; and certainly those who trouble the least, and work on the most intelligent lines, appear to be the most successful.

Relative to the resuscitation of the ancient practice of growing Apples and Pears on their own roots, we have nothing to say at present beyond our readiness to publish records of experience from home or colonial cultivators.]

PREVENTION OF THE CARROT MAGGOT.

IN many gardens it is almost impossible to grow good Carrots on account of the grub which so persistently attacks them. Such has been the case for several seasons at Craggside.

Last year an old man who had been successful in growing Carrots advised Mr. H. Hudson to try "Sunlight" soap as a preventive, the plants to be syringed once a week during May and June, at the rate of 8 gallons of water to 1 lb. of soap.

In the first week of August last I saw the Carrots growing in the gardens at Craggside to which the mixture had been applied. A finer and healthier crop it would be impossible to see.

In the month of September, at the Alnwick Horticultural Society, Mr. Hudson exhibited samples of the same Carrots, with which he won the first prize. The specimens shown were remarkably well formed, clean, and beautiful.

As this prevention is easily applied, and not costly, it is to be hoped many readers of "our Journal," in different localities, will test it during this season, and report later on.

Many of them use "Sunlight" in other ways, as it has been advertised in these pages, and it will please them still more if it help them to secure clean crops of Carrots. It should be tried also against the Onion maggot. The great thing is to act in time.—N. N.

FREESIAS OUT OF DOORS.—I am sending you a few Freesias that have been grown outside. The bulbs were planted last September on a south border, and have not been protected in any way from frost. I cut my first blooms on the 5th of December, 1898, and I daresay I shall be able to cut the last about the end of the present month. Of course the earlier ones were grown under glass.—ARTHUR LEWIS, *Cappoquin, co. Waterford*. [The spikes sent by our correspondent were producing numerous flowers of excellent substance and delicious fragrance.]



RECENT WEATHER IN LONDON.—Again we have to record sunny days and cold nights from Saturday until Monday evening. There have been frosts on one or two occasions. On Monday night a little rain fell, and Tuesday was very dull and rather cold until late in the afternoon, when the sun shone for a short time. Wednesday opened under the same conditions as the previous day.

— WEATHER IN THE NORTH.—No great improvement has taken place in the weather during the week ending 8th inst. On several nights sharp frosts have occurred with heavy rime, and this, followed by the bright sunshine of most days, is telling adversely on vegetation. Cold easterly winds have prevailed throughout the week, with intense cold, especially on a few evenings.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Prof. Church, Mr. Sutton, Rev. W. Wilks, Rev. G. Henslow, Hon. Sec. *Cattleya malformed*.—Dr. Masters exhibited a blossom having only one petal, one sepal, and a straight column. This reduction to a symmetry of "two" is not uncommon in Orchids. *Parasitic fungi*.—Some interesting communications with specimens of *Polyporus ulmarius*, showing how it appears to decay the interior of the tree and fructifies in the hollow, were sent by Dr. Plowright; also descriptions of parasitic fungi on Alders and Willows. They will appear in the "Gardeners' Chronicle." A vote of thanks was given to Dr. Plowright for his communication.

— WOOD ASHES.—In Mr. Cecil H. Hooper's article on manures, on page 334, he observes that wood ashes contain from 5 to 7 per cent. of potash and 2 per cent. of phosphoric acid. I am very pleased to see that phosphoric acid is recognised as one of the manurial items in wood ashes, as I do not remember ever seeing it mentioned before in any works on manures or chemistry. I consider wood ashes a valuable manure for gardens, both outside and for potting purposes inside, more especially for light soils, as it helps to cement the sandy portions together, which prevents too rapid evaporation; and this, of course, is in addition to its value as a manure.—J. L.

— AN ORCHARD HOUSE.—A few days since, when I looked through a long lean-to house in two divisions, and nearly filled with Plum and Cherry trees in pots, on all of which good crops were set, I could but realise the value of such houses during a season like the present, when even such well protected fruits as Peaches, and Apricots on warm walls outside were almost denuded of fruits, and sharp frosts and scathing cold winds were doing so much harm to other blooms. Yet this house was on the north side of a wall, and unheated. Whatever may be our fortune in relation to fruit crops outside, it is evident that, to be certain of securing fruit, there is nothing like having orchard houses in which to grow the trees. In this case all these were in pots, and there were numerous others plunged in leaves outside, intended to furnish well spurred trees for next year.—D.

— BEGONIA GLOIRE DE LORRAINE.—In the short time this plant has been in commerce it has found its way into numberless places, and is increasing in popularity by leaps and bounds. And no wonder, for it is one of the most beautiful winter-flowering plants imaginable, and one that may be cultivated in any greenhouse with proper attention. Those who have not rooted their young plants for next winter must not lose any more time, and those having the cuttings still in the store pots should have them potted singly without delay. Once starve them into flowering and it will be difficult to get healthy growth afterwards. An effective way of growing it is to put half a dozen cuttings into a 4-inch pot, and when rooted well, shift three or four of these potfuls entire into large hanging baskets. These will be well furnished by the autumn, and the effect in winter, when the whole of the growth is covered with the bright rosy blossoms, is very fine. Or, if pots are preferred, they may be given a shift into 6-inch or 7-inch before they get really root-bound, this being a capital way of getting fine plants for grouping. Even the smallest bit flowers freely and looks bright, while the effect of a large number of plants grown and flowered well, and tastefully arranged with Ferns, is unequalled by any other winter-flowering plant.—H. R.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, May 16th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Some of the Plants Exhibited," will be given by the Rev. Prof. G. Henslow, M.A., at three o'clock.

— BERBERIS STENOPHYLLA.—The pretty yellow blossoms have a very striking effect against the deep shining green leaves of this shrub, one of the best for planting in any collection of shrubs and flowering trees. The habit is very elegant, and, unlike many of this class of plant, it is not in the least fastidious as to soil. Planted a few years since on soil of the very worst description, and on a piece of ground where even grass would not grow, it is making fine bushes, and these are now wreathed with blossom. But it is worthy of far better things, and should be freely planted towards the front of shrubbery borders, or at the back of herbaceous beds of large size.—B. S. E.

— ONION NE PLUS ULTRA.—This monarch among Onions has on several occasions been referred to in the pages of the *Journal of Horticulture*. In our report of the meeting of the Royal Horticultural Society, held on April 18th, we failed to observe that it was recommended by the Fruit and Vegetable Committee for an award of merit. It was staged by Mr. L. J. Dunbar, seedsman, Hemel Hempstead, and is stated to be a seedling from Ailsa Craig and Carter's Record, the former of which it much resembles. It, however, is larger than that variety, and not quite so globular in form. It will be remembered by many readers that Mr. W. Fyfe, gardener to Lord Wantage, V.C., staged a bulb of Ne Plus Ultra at the Royal Aquarium last autumn, which weighed 3 lbs. 12 ozs. when harvested.

— MELON WILLIAM TILLERY.—I saw this handsome, free-cropping, green flesh Melon doing finely recently in a house at Ruxley Lodge, Esher. It is some thirty years since this fine variety was raised, and it shows how good and true a Melon can be kept for so long a period, that it is so remarkably good now. Mr. Miller, the gardener, raised it when at Worksop Manor with the previous Lord Foley, and named it in honour of his old and greatly esteemed friend William Tillery, who was then at Welbeck. Mr. Tillery much appreciated the compliment, and a good old gardener was thus complimented by becoming sponsor to a splendid Melon. Were this variety now sent out as a seedling with a new name it would no doubt receive a high award. As it is, it is one of the very best green fleshed Melons in cultivation, and Mr. Miller is to be complimented on having the fruit so true.—A. D.

— POLYANTHUS JOHN WILKINSON—CROWN IMPERIALS.—Mr. Joseph Oliver writes:—"I am very pleased to see that John Wilkinson Polyanthus has given such satisfaction to Mr. Arnott. Upon one of our plants I counted the other day twenty-four fine trusses. We have never been without some bloom on it all the winter. What a fine plant the old Crown Imperial Lily is when well grown. We have some that have not been replanted for many years, and no one would take any notice of them; but one plant in front of our window is simply grand; it only wants 3 inches to make it 5 feet high. Seven large flowering stems, crowned with their candelabra-looking heads, command attention. It is the result of one good bulb planted four years ago among good stuff. Bees and flycatchers patronise it amazingly." Mr. Oliver further observes:—"We are having very cold ungenial weather—4°, 5°, 6°, and this morning (8th inst.) 7° of frost, and white with rime everywhere."

— OUTDOOR APRICOTS—SUCCESSFUL FRUITING.—I consulted Mr. Rivers when getting a couple of Apricots for a sunny south wall in my garden some four years ago, and he recommended Early Moor Park. Since then, though the growth has been healthy and the wood well ripened, I had in no year more than half a dozen fruits, or less. I was consoled by being told if I had a crop once in seven years I would be lucky. To-day I did a considerable thinning of fruits, many half an inch in diameter, and think more than one hundred still remain on a single tree, covering 60 or 70 superficial feet. I attribute the success, outside the ordinary treatment, to two causes, which it may interest some of your readers to note. 1, I protected with a 20 foot board in February, 12 inches wide, over which I put ordinary fish netting, two folds of which draped down in front, so as to partially protect both from frost and sleet. More than two folds would exclude sun and light from the foliage. 2, Of more importance perhaps, was a partial lifting of the fibrous roots in front—not the tree itself—relaying of them in fresh loam, and building a heap of manure, which heated slightly, over them, and about a yard from the base of the tree. I should have said the protection is also over a Nectarine, which, although not so fruitful, promises a fair crop.—W. J. MURPHY, *Clonmel*.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
April.		46.4	40.8	51.4	41.9	—	52.2	50.2	48.1	40.8
and		49.9	44.9	55.5	37.1	—	51.3	50.4	48.3	27.6
May.		55.8	51.2	60.8	46.0	—	51.5	50.4	48.5	41.2
Sunday .. 30	N.N.E.	46.6	44.8	54.1	45.0	—	52.2	50.6	48.7	44.3
Monday .. 1	N.E.	47.6	41.7	51.9	32.3	—	49.9	50.6	48.9	24.5
Tuesday .. 2	N.E.	49.6	41.9	54.0	30.5	—	48.1	50.1	48.9	22.3
Wednesday 3	N.N.E.	50.0	44.2	57.4	32.6	—	48.4	49.6	48.9	23.1
Thursday .. 4	E.N.E.									
Friday .. 5										
Saturday 6										
MEANS ..		49.4	44.2	55.0	37.9	Total	50.5	50.3	48.6	32.0

No rain has fallen since the 29th ult. The weather has been rather dull with cold winds and very sharp frosts on the mornings of the 4th, 5th, and 6th inst.

— **APRIL WEATHER AT HODSOCK PRIORY.**—Mean temperature of the month, 46.6°. Maximum in the screen, 62.8° on the 1st. Minimum in the screen, 27.2° on the 18th. Minimum on the grass, 15.1° on the 18th. Number of frosts in the shade, five; on the grass, fifteen. Sunshine eighty-six hours, or 21 per cent. of the possible duration. Rainfall 2.08 inches; difference from the average, + 0.34. Rainy days, eighteen. Maximum fall, 0.35 on the 9th. Rainfall from January 1st, 6.28 inches; difference from the average, + 0.57. Dull unsettled and showery month, no really warm day.—J. MALLENDER, *Workshop*.

— **APRIL WEATHER AT DOWLAIS.**—Rainfall, 6.26 inches, which fell on twenty-one days; greatest fall, 0.88, on the 6th. Temperature, mean maximum, 51°; highest reading, 61°, on the 18th. Mean minimum, 34.3°; lowest readings, 25°, on the 16th and 17th; below freezing point on thirteen nights. The wind was in the S.W. and W. on twenty-three days. There were fifteen sunless days. A very rough, wet, stormy month, which has thrown the outdoor work much behind. There were heavy falls of snow on the 20th and 21st, and very strong winds were general throughout the month.—WM. MABBOTT.

— **EARLY PLANTED POTATOES.**—I have been wondering what effect has been produced on the very early planted Potatoes in exposed areas by the recent sharp frosts. Naturally we expect to find that where unprotected the tops have been cut to the ground, or even lower; but whether having learnt wisdom from experience, or for other reasons, I do not find that Potato planting generally has been so early this season as it has been in some previous years. Except in very sheltered places, and even then where some form of covering can be furnished at night, there could not be any gain in planting sets so very early. None of my planting, and that refers to a considerable quantity in various places, were put in early enough to get through before the middle of May, and I trust ere then all danger from frost will be over and the plants will grow unharmed.—A. KINGSTON.

— **STOCKS FOR FRUIT TREES.**—I am of the same opinion as Mr. Lambert (page 314) regarding the value of Paradise stocks for Apples growing in the open field where size of tree and quantity of fruit is the first consideration. If trees worked on the Paradise stock become what is known as "stunted" through poverty of the soil, they are most difficult to re-start. My experience teaches me never to plant an Apple tree worked upon a Paradise stock if free growth is required, especially if the soil is heavy, but for a limited space, light soil, and constant attention in supplying stimulative food, this stock might satisfy. Mr. Lambert omits what is, in my opinion, the best of all stocks—viz., the seedling or free stock obtained from the pips or seeds from the cider mills. Some growers object to it on the ground of too vigorous growth, and consequent shyness in bearing, but the latter charge is unfounded, as I have proved by experience gained from several hundred trees. Take Lord Grosvenor for example. This variety is naturally a strong grower, yet it will give a crop of fruit the year after planting, if required, on the free stock. Surely this cannot be termed shy bearing. I agree with Mr. Lambert in his remarks anent the failure of the Myrobalan stock to oust Quicks or White Thorn as a hedge plant. I have been watching a hedge of it for the last five years, and from its progress I should hesitate to recommend it to anyone or to plant it myself.—E. M.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting, to be held in the rooms of the Society, 7C, Victoria Street, Westminster, S.W., on Wednesday, the 17th inst., at 4.30 P.M., the following papers will be read:—"The Mean Temperature of the Surface Waters of the Sea Round the British Isles, and its Relation to that of the Air," by H. N. Dickson, F.R.S.E., F.R.Met.Soc.; "Some Phenomena Connected with the Vertical Circulation of the Atmosphere," by Major-General H. Schaw, C.B., R.E.

— **PIPTANTHUS NEPALENSIS.**—Better known as the Evergreen Laburnum, this fine spring-flowering shrub should be more generally grown, as the glossy green foliage and golden yellow flowers are striking and handsome. The plant requires a warm situation with shelter from cold winds, or the foliage is apt to be browned at the tips. It may be propagated in autumn by cuttings of the half-ripened shoots, these rooting freely if kept moist under a hand-light or by layers, the latter plan being preferable where only a few plants are needed. It likes a rich sandy soil.—C. H.

— **TRILLIUM GRANDIFLORUM.**—The American Wood Lily is a splendid plant for working in large pans or pots in a greenhouse, yet how seldom it is seen. I recently noted several large pans full, and the rosy white flowers had a very beautiful appearance upon the bright fresh-looking foliage. The plant does best in a very moist soil containing a good percentage of peat, and these individual plants are grown in peat and bog moss, with only a little loam. During the time the growth is active ample root and atmospheric moisture are essential, and to preserve the foliage careful shading is necessary.—T. G.

— **CHOISYA TERNATA.**—Reference is made on page 297 to this evergreen as a useful pot plant. But to see it in its glory is, put out a strong plant at the foot of a south wall in deeply dug and well manured soil, where it will quickly grow into a handsome bush. Train the bulk of the branches to the wall until, say, 5 feet in height has been covered, then allow it to grow at will, thus forming a dense bush. Give plenty of water during the summer while growth is being made, and every year during the month of May the plant will be smothered with its pure white blossoms, backed by dense green leaves.—E.

— **POTATO UP-TO-DATE.**—What a pity this handsome free-cropping Potato is not of better cooking quality. I am aware that from various soils the conditions differ, but speaking of examples tasted from several sources, I am driven to the conclusion that for quality this variety is second-rate. This is the opinion also of men who grow it by the acre, but who also know its selling qualities, and act accordingly. Not only is it almost black when cooked, but it has an offensive smell, as well as a disagreeable taste. In spite of this I am giving it an extended trial beside of my favourite main crop variety, White Beauty of Hebron, of which I have 5 acres.—E. MOLYNEUX.

— **RHUBARBS.**—It has recently been urged that Rhubarb should be more raised from seed, less dependance being placed on divided plants and old stocks. It is probably because we have preferred to rely so much on such propagated stocks, that we have so very few good Rhubarbs in commerce. It is true there is a large collection of these plants at Chiswick, almost the only garden in the kingdom where many of them may be found. But after all, two or three selected as the best suffice for all purposes, for Rhubarb stems differ little in flavour or texture on the average, except, of course, that the younger and smaller ones are of more succulent nature than are old and large ones. But whilst our best two Rhubarbs, Hawkes' Champagne, the popular early market variety, and apparently found under other designation, seems to be the best for colour and earliness, there is no better average main crop form than is the Victoria. But were Hawkes' Champagne rather larger in stem its value would be enhanced, and were Victoria much more richly coloured it would be great gain, for there can be no doubt but that in Rhubarbs colour is a valuable marketable commodity, and enhances flavour. The seedling variety from Victoria, which Mr. G. Wythes placed before the Fruit Committee at the Drill Hall on the 2nd inst., had all the size of the parent, and nearly the rich colour of Hawkes' Champagne. That variety well merits increase, because it is an advance in the right direction. It will be great gain if anyone can give us a finer Champagne, and if possible even an earlier one. Rhubarb in the earlier part of the year is in immense demand, and is very expensive. Even when pulled and bundled from the open air, the bundles are often sold at 6d. each, and they contain one-half rubbish. It is not to the credit of growers that such stuff be foisted on the public. It is only inviting better consignments from other lands. Market men of high repute are careful in their packing.—A. D.

TOMATO WINTER BEAUTY.

MANY persons will be of the opinion that we have a sufficiency of Tomatoes in cultivation at the present time, and for summer cropping there is certainly a great supply of varieties not easy to excel. When, however, it becomes a question of producing heavy crops in the early spring months several of the most popular varieties do not render a particularly good account of themselves. It was as a superb winter fruiter that Winter Beauty, when exhibited at the Drill Hall by Mr. S. Mortimer of Rowledge, was given an award of merit by the Fruit Committee, who would probably have recommended a first-class certificate had two or three fruiting plants accompanied the boxes of specimens. On page 370 "A. D." gave an excellent description of this Tomato at home, and we cannot supplement those remarks better than by reproducing a photograph of a portion of one of the houses, which was taken on April 28th last. The new comer, as possessing earliness, productiveness, colour, quality, and size, may be expected to find its way into many gardens.

IXORAS.

(Concluded from page 356.)

AFTER cutting back the plants should have gentle bottom heat to induce them to start freely into growth, and the top heat ought to range from 65° to 70° by artificial means. They must be very carefully watered and syringed. If given bottom heat they will require next to none of either, for the moisture given off by the fermenting material and that resulting from damping surfaces as they become dry will be sufficient in most cases. When such is not the case very lightly sprinkle, and keep the soil just moist.

After the plants have started into growth, any potting that is needed should be done. The plants are very impatient of disturbance at the roots, hence are potted with the ball entire—that is, with the crocks only, and any loose soil is removed. Large shifts must not be given, a little fresh soil under, around, and over the ball being sufficient. This may range from half an inch to 1 inch, according to the vigour of the plants, always using the compost rough for established plants, and if possible return to bottom heat.

The plants must be carefully watered. They can hardly have too much heat and moisture in summer, and the less they are syringed the better, as the water often spoils the foliage, which is not the least attractive part of the plant. A little weak, clear liquid manure benefits during the growth of the plants and development of the trusses of bloom. The heat should be 65° to 70° at night, 75° by day from fire heat, and 10° to 15° or more from sun heat. Damping in the morning soon after midday, and again in the evening, will supply air moisture. Moderate ventilation is imperative, as the plants enjoy a change of air without sudden fluctuations or depressions of temperature.

The Ixoras are evergreens. They do not admit of the drying off process, but it is astonishing what a long time they will go in winter time without water. In a bed of fermenting materials they, like Pine Apples, need very little water at the dead season. In other cases the soil must just be kept moistened sufficiently to keep the foliage fresh. That is all the resting they require, with a lessened amount of air moisture and cooler atmosphere. This in the autumn and winter may range from 55° to 60° as a minimum, and about 5° more from fire heat in the daytime. The ripening of the wood is essential to the production of flowers, well matured growths being more prolific than soft and immature wood.

The species number over a hundred, and the varieties are numerous. Some of the most desirable, of which the choicest have an asterisk, are—

I. acuminata.—This has white flowers; fragrant, large; corymbs decomposed, crowded, almost sessile; height 3 to 6 feet. India.

I. coccinea superba.—The flowers are deeper coloured and broader and thicker in the petals than those of the species; bright red, disposed in very large heads or corymbs, which are umbellate. It also grows more vigorously than *I. coccinea*, which is, perhaps, the more elegant plant. *I. c. superba* is from Java, and *I. coccinea*, syn. *I. grandiflora*, from the East Indies; height 3 to 4 feet.

I. Colei.—Flowers white, produced in large round corymbs, leaves deep green and roundish; plant strong, free and robust growing. A cross between *I. coccinea* and *I. stricta alba*.

I. Dixiana.—Flowers dark orange, borne in very large corymbs; plant of a hardy constitution and free-flowering habit. A seedling form.

I. floribunda.—Flowers reddish-scarlet, produced in large dense corymbs, plant of robust growth. A garden variety.

I. Fraseri.—Flowers brilliant flamed salmon colour, borne in numerous, terminal, globular corymbs; foliage dark green; plant of free and vigorous growth. A beautiful garden variety.

I. fulgens, syn. *I. salicifolia*.—Flowers orange-scarlet, produced in dense terminal corymbs; height 3 to 4 feet. Java.

I. javanica.—Flowers orange, borne in dense corymbs on long peduncles; height 3 to 4 feet. Java.

I. macrothyrsa, syn. *Duffi*.—Flowers deep red tinged with crimson, produced in immense trusses; leaves deep green. A fine plant. South Sea Islands.

I. odorata.—Flowers pure white, changing to yellow-brown, and very fragrant, produced in large terminal clusters or panicles 1 foot or more in diameter; height 3 feet. Madagascar.

I. Pilgrimi.—Flowers orange scarlet shaded with crimson, borne in round corymbs about 6 or 7 inches in diameter; plant with a good hardy constitution, and, like its parent *I. Williamsi*, not so exacting of heat as *I. coccinea* and most others.

I. Prince of Orange.—Flowers cinnabar-red, borne in compact heads; plant free and vigorous in growth. A fine garden variety.

I. princeps.—Flowers buff white, changing to deep reddish orange, produced in the greatest profusion; a fine species. Java.

I. regina.—Flowers violet salmon, borne in large dense corymbs. A dwarf, compact growing, handsome garden variety.

I. sanguinea.—Flowers crimson, shaded with deep violet, produced in large dense corymbs; foliage deep green. A garden variety.

I. stricta (crocata).—Flowers light orange, borne in many-flowered cymes. Height 2 to 3 feet. Moluccas.

I. s. rutilans.—Flowers rich orange, produced in compact heads; plant freer and more vigorous in growth than the type.

I. Williamsi.—Flowers reddish salmon, in large heads; plant of a free-growing and profuse flowering habit, and requires somewhat less heat than most of the other species and varieties.—G. ABBEY.

THE STUDY OF NATURE.

And this our life, exempt from public haunt,
Finds tongues in trees, books in the running brooks,
Sermons in stones, and good in everything.

WHAT perfect contentment! ah, and what pleasure too is expressed in these words of the exiled Duke in "As You Like It." Though far from the busy haunts of men, amid the solitudes of the Forest of Arden, to him the philosophical aspect of the commonest things was apparent. There must be hundreds, probably thousands, engaged in horticultural pursuits, similarly situated, "far from the madding crowd." Would it not be well if these could find a like solace and consolation in observing with intelligent interest the marvels that the various natural phenomena supply?

The smallest flower

That twinkles through the meadow grass, can serve
For subject of a lesson; aye, as well
As the most gorgeous growth of Indian climes;
For love of Nature dwells not in the heart
Which seeks for things beyond our daily ken
To bid it glow.

What Tennyson has called "the fairy tales of science" are within the reach of all, but, alas! how few there are, even among gardeners and nurserymen, who understand the language of the trees; read the books mysteriously hidden in the recesses of the running brooks; hear the sermons discoursed for ages by the rocks and soil, or realise the beauty and perfectness of all things; the unspeakable delight of studying Nature in her own domain.

Leigh Hunt, in one of his essays, when speaking of the least esteemed of the commonest plants, exclaims, "What a quantity of life, and beauty, and mystery, and use, and enjoyment is to be found in them, composed of all sorts of elements, and shaped as if by the hands of fairies." Coleridge said that poetry had soothed his afflictions, multiplied and refined his enjoyments, endeared solitude, and given him the habit of wishing to discover the good and the beautiful in all that surrounded him. The endeavour to describe these emotions exerted his intellectual activity, and gave him pleasure when perhaps nothing else could.

We are not all possessors of the "divine afflatus," but our better nature will develop in the same degree as the poet's if we strive to hold a closer communion with the animate and inanimate creation which comes within our daily ken. Study of this kind draws us from all that is sordid; we live for the time being in an earthly paradise; our musings and imaginings take us out of ourselves and "lend wings to our dreams." If the external beauty of plants had this charm for us; if the meanest flower that blows could enchant us with its form and colour, we should not be satisfied until we were familiar with its structure and functions.

It is not unusual in a semi-rural neighbourhood to see in early spring the first fresh green leaves of the trees wantonly destroyed—many "sunny spots of greenery" strewn with the mutilated branches, as if their renewed growth was an insult to the passer-by. The owner of the pitiless whip or stick that works such havoc sees no beauty in these banks of green, for a devoted attachment to the works of Nature is an evidence of delicacy and refinement. This destructiveness, which often exists in the young bucolic mind, is due, not to the want of pleasures, but to the inability to select and enjoy those already possessed. Familiarity in this, as in so many cases, breeds contempt,

so that material things without the light of science to reveal and unfold new wonders, become purely utilitarian—the tree is so much firewood, simply this and nothing more.

To quote Leigh Hunt again: "Suppose flowers themselves were new. Suppose they had just come into the world, a sweet reward for some new goodness, and that we had not yet seen them quite developed; that they were in the act of growing; had just issued, with their green

With the rejuvenescence of Nature at the present time—the trees and fields clothed in masses of blossom and greenery, and every hedge-row and meadow starred with spring flowers—let us commence our study of Nature. We shall be in good company, for men of great abilities have spent their lives in the observation of small things. Let us be encouraged with the thought that the flowers will become more beautiful with the knowledge of their structure, the scent more



FIG. 83.—TOMATO WINTER BEAUTY.

stalks, out of the ground, and engaged the attention of the curious. I imagine what we should feel when we saw the first lateral stem bearing off from the main one, or putting forth a leaf. How we should watch the leaf gradually unfolding its little graceful hand; then another, then another; then the main stalk rising and producing more; then one of them giving indications of astonishing novelty—a bud! Then this mysterious bud gradually unfolding like the leaf, amazing us, enchanting us, almost alarming us with delight." On reading such a passage we are inclined to say with Whang the Miller, "Oh! that I could dream like him!"

sweet when we know the method adopted by the plant for its dissemination.

No greater treasures can be offered to human desire than enjoyments such as these, which at once exercise the mind and improve the heart, repel the influence of sordid passions, and encourage the suggestions of humanity, virtue, and religion. By observing the processes constantly going on around us, the physical properties of matter and the mutual relations of organised beings are far more effectually understood than when learned from descriptions in books, without the aid of observation or inquiry.—F. S. H.

PROGRESS IN FRUIT PRODUCTION.

(Continued from page 323.)

IN consequence mainly of the interesting matter on pinching fruit trees occupying, and worthily so, a considerable amount of space in our two last issues, the publication of the following extracts from Mr. W. Bear's comprehensive paper in the "Journal of the Royal Agricultural Society of England" has been postponed.

FRUIT IN THE EVESHAM DISTRICT.

"Forty years ago Potato growing was the great industry at Evesham, and very little fruit was produced there; but during that period, and mainly within the last twenty years, fruit planting has been constantly extending, and now there must be considerably over 1000 acres within a few miles of the prosperous little Worcestershire town. The rent of market garden land close to the town before being planted with fruit is £4 to £5 an acre, while planted land is worth £8 to £10 per annum, but these rents are charged only when the landlord originally planted the trees, or has bought up the tenant's right in them; for an interesting system of tenant-right prevails in the Evesham district, under which a quitting market gardener or fruit grower sells his interest to a successor approved by the landlord, either at the old rent or at an altered one agreed upon by the landlord and the new tenant.

"It is satisfactory to learn that fruit growers in the district are generally prosperous, and vegetable growers likewise; many get a living from 5 acres of fruit trees and the crops grown between and under them, working themselves and employing four or five men also. Twenty acres of fruit are considered as making a large business in Evesham, and no one, so far as I can learn, has over 30 acres of fruit alone. At a few miles distant, however, and in the neighbourhood of Salford Prior, fruit plantations are larger, and one grower has about 100 acres. The labourers earn fair wages for a place in the midst of a great agricultural neighbourhood. In Evesham they get 17s. a week, and in parishes just outside 16s. Women have 1s. 6d. a day, but work mostly by the piece."

"Mr. H. Masters, one of the most extensive fruit growers, stated that the most important fruit crop in the Evesham district is the Egg (or Pershore) Plum, and the next (in Evesham, but not so much in the outlying parishes), the Damascene or Worcester Damson. Apples rank next in importance among tree fruits, and then Cherries, Pears not being grown to a large extent. The great size and flourishing condition of the old Plum trees in the district are remarkable, and the suitability of the soil and climate to this fruit is further shown by the long life of the trees. Mr. Masters has some giants nearly forty years old, and still full of vigour. He has six or seven pots of (72 lbs.), or 430 lbs. to 500 lbs., off a single Damascene tree in a very prolific season. The Victoria is most commonly grown, next to the two varieties mentioned; after which come Rivers's Early Prolific, New Orleans, Czar, Cox's Emperor, and Monarch. The Gooseberry is by far the most important bush fruit in Evesham. Strawberries are not grown upon a large scale, though a great many market gardeners have small pieces. Mr. Masters has 8 acres, and last year 16 tons were gathered from 2 acres, besides a quantity of waste. The crop is a somewhat uncertain one; but, when 8 tons per acre are produced, it must be an extremely profitable one. Probably such a yield is rare. Young fruit trees are pruned in the autumn and winter; but after a few years they require only a little trimming to keep them in shape. The manures used for fruit are chiefly soot, fish guano, blood manure, and phosphates. Basic slag is coming into use as a phosphatic manure.

THE PERSHORE FRUIT DISTRICT.

"The Earl of Coventry, as President of the Royal Agricultural Society, kindly interested himself in my investigation of the fruit industry, and invited me to visit his Croome Court Estate, in the Pershore district of Worcestershire. Under the obliging guidance of the Earl's agent, Mr. Hill, who gave a great deal of information about the district, a visit was first made to the jam factory, close to Pershore Station, established and worked for a few years by Lord Coventry for the benefit of his tenants, but now in the hands of Messrs. Beach & Son. The factory is small, but well appointed, and everything was found perfectly clean and conveniently arranged. Jam making was finished for the day, but fruit was coming in for the following day's work. Mr. Beach, jun., said that in consequence of the abundance of Plums in the district he expected to be able to obtain them for 2s. 9d. or 3s. per pot of 72 lbs., instead of 9s. to 10s. paid in the previous year; but it is doubtful whether they came down to such low prices during the season, and Mr. Cosnett, one of the Earl of Coventry's tenants, made 16s. 6d. per pot as a starting price at Birmingham for Early Rivers. Mr. George Jones has an excellent fruit plantation at Pinvin, close to the jam factory. Seven acres of the plantation are occupied by Gooseberries as bottom fruit, and 530 pots (17 tons) had been picked off that area, while enough remained as ripe fruit to make up an average of 2½ tons per acre.

The principal varieties are Crown Bob for selling early, Whinham's Industry, Lancashire Lad, Keepsake, and a few Warringtons for ripe fruit, for which Lancashire Lads also are held over to some extent. Some of the bushes are twenty-three years old. Others planted only three years before the past season, when they were a year old, had a tremendous crop. They bore fairly in the second year. These were Lancashire Lads. Over 200 pots of Whinham's Industry were picked off 1 acre, and none of them sold at less than 4s. a pot, so that the return on this acre for bottom fruit alone was over £40.

"Mr. Cosnett said his crop of Gooseberries was the biggest he ever saw, and his years are not few. He had picked about 200 pots of Whinham's Industry from an acre. This would be nearly 6½ tons, an enormous quantity. The bulk had been sold at £7 a ton. Mr. Cosnett was afforded an object lesson as to the harm done by putting grease on to the trunks of trees without bands before he had learned the danger of so acting. The trees were badly injured.

"There was much to see at Croome Court and in the grounds besides the fruit plantations, including a beautiful kitchen garden of extraordinary size. The Earl of Coventry was good enough to show me many objects of interest, and to accompany me to the fruit plantations, 40 acres in extent. They consist of Plums and Apples, planted alternately—a very good plan—with Black Currants as the only bottom fruit, as less liable to the depredations of birds than Gooseberries or Red Currants. As the plantations are isolated this is an important consideration. The trees and bushes presented a very prosperous appearance. The fruit is sold by tender as it grows, buyers to do the picking. Mr. Hill in this way once sold for Lord Coventry three-quarter acre of Plums and Apples for £70, and he knew of a case in which 1½ acres sold for £90. Both sales took place some years ago. Lord Coventry is fortunate in not being troubled with the Black Currant mite, his immunity being due to the isolation of his orchards. There are between 200 and 300 acres of fruit on the estate.

FRUIT GROWING AND PRESERVING IN ESSEX.

"Although Essex is not a great fruit county orchards have increased by nearly 1000 acres since 1878, and the small fruit by about 1300 acres since 1888. In that county, moreover, one of the most striking instances of a farmer becoming a successful fruit grower is to be found. In 1862, Mr. A. C. Wilkin of Tiptree Heath, near Kelvedon, occupying the next farm to the late Mr. J. J. Mechi, came to the conclusion that Wheat growing was not likely to pay, and therefore turned his attention to fruit growing. He began on a very small scale, planting only 2 acres of Strawberries. The plants cost no less than £25, and were difficult to obtain even at that high price, as existing growers did not care to supply a new competitor. However, Mr. Wilkin increased his fruit area every year, and in 1885 he built his jam factory. In 1887 the business was transferred to a limited company, called the Britannia Fruit Preserving Company, with a share capital of £13,500, Mr. Wilkin owning more than half the shares, and being made managing director. At present two of his sons are the only other directors, and a third son is secretary. Since that date the acreage of fruit has been increased to 260 acres. There are 165 acres of Strawberries, 43 acres of Raspberries, 30 acres of Black Currants, and small areas of Red Currants, Gooseberries, Plums, Damsons, Greengages, Apples, Quinces, Blackberries and Cherries, some of the bush fruit being on the same ground as trees. The soil is a stiff loam over what Mr. Mechi used to call a "bird-lime" subsoil, and Strawberries flourish upon it magnificently. The Small Scarlet Strawberry, descended from the wild alpine, is a speciality at Tiptree Heath, no less than 55 acres being devoted to it, as it makes the best of jam. The crop of this variety seen on July 5th was the finest inspected anywhere during my wanderings through some of the principal fruit districts. There were two rows only on an eight-furrow stretch, this Strawberry being of a spreading habit, and the plants stood up high above the ground covered with the small and brightly coloured berries. Fair crops of Paxton and Royal Sovereign were also seen, the few Nobles grown having been gathered. Picking was in full swing, over 400 persons being employed, with a dozen gangers to superintend. The prices usually paid for picking are 1d. per 3 lbs., or 4 lbs. for the large varieties, and 1d. per lb. for Small Scarlets. Men earn 4s. to 7s. a day at picking, and Mr. Wilkin has known a man to earn 10s. in a day. Women and girls are also largely employed. Women do not pick as much fruit in a day as men, but do the work more carefully. Mr. Wilkin sells fruit when it is dear, and he made 10s. a peck of his earliest Royal Sovereigns. Strawberries yield well when two years old, and stand for six or seven years on this farm.

"No pulp is made in the factory except when there is a glut of fruit, and then only for the 'household jam,' which is distinguished from the 'whole fruit conserves,' and sold at lower prices. Moreover, rapidly perishable fruit, such as Strawberries and Raspberries, is never held over for a day when intended for whole-fruit preserves. The picking of Strawberries starts at 4 A.M., and the first lot is made into jam by 6 A.M. About 200 tons of jam are made in a year, including about half the fruit grown by the company, and some fruit purchased,

amongst it Apricots from California, Italy, France, and Spain. There are eleven steam-jacketed vats to hold 70 lbs. each, and two to hold half a ton of syrup each, which were in use at the time of my visit. The 70 lbs. vats are not half filled in jam-making, only about 28 lbs. being put into each, as the jam is better when made in somewhat small quantity. The syrup, simply sugar and water, after being boiled, is first placed in the vats, and the fruit is added afterwards. The heat is regulated by thermometers, and can be raised if desired to 225° F. Strawberries require to be boiled for only seven minutes, and very ripe fruit for only four, while Gooseberries and some other kinds of fruit need more time. The scum is thrown away, and the scrapings of the vats are not allowed to go with the whole-fruit conserve.

"In 1889 Sir Walter Gilbey commenced to grow fruit on a small scale on his estate, Elsenham Hall, Essex, by way of example to his tenants, cottagers as well as farmers, and in 1893 he started a jam factory. To encourage the cottagers he has granted pieces of land close to their dwellings rent-free, and provided Strawberry plants for those who required them, on condition that they send their fruit to the factory at market prices, and it is not surprising that a good many avail themselves of this advantage. Jam is made quite in the home method, except that steam and thermometers are used. That is to say, fruit, excepting some of the Strawberries, is simply boiled with the best leaf sugar. The only fruit boiled in syrup previously prepared is the Strawberry for whole-fruit jam. Raspberries are boiled only six to seven minutes, but Strawberries longer. In bottling Gooseberries, the fruit is put into the bottles, which are then wired down, and placed in cold water, to be gradually heated by steam and kept at a temperature of 180 F. for about two hours.

(To be concluded.)

WRINKLES.

"WRINKLES, indeed! As if there were not enough already upon the brow of care." It is admitted; in fact it "darna be disputed" when one thinks of spring frosts pouncing down on the early Potato, and blackening tender blossom in the silent watches of the night. Oh! the perversity of Nature! Even the great poet must have had an inkling of such matters malignant when he said, "Rough winds do shake the darling buds of May;" but there is a little incentive admonition in the information that "Our remedies oft in ourselves do lie which we ascribe to Heaven." This "darna be disputed" either. There are, of course, wrinkles and wrinkles, and some of the little ones proffered, or asked for here, may smooth away a few of the big kind.

Preparation is half the battle; timely application giveth the victory. I served under one old gardener who rigidly insisted upon the usual nightly covering up, independent of weather, till the end of the "merrie month." To us of the bothy it was sheer vanity and vexation to our young spirits. To some extent we were right, for discrimination will three times out of four discern the shadow of coming events, and for the doubtful fourth always make ready. But there must be no margin for errors of judgment, or hasty conclusions at night may bring sorrowful reflections in the morning.

Twenty-five years since, in a large garden where Potatoes were a good gardener's pride, came a cry in the "wee sma' hours," "Up lads and man the fire engine, or the Potatoes will be all burned." The cry of frost was as thrilling to us as the cry of fire, so we "up" and at 'em—trundled out the cumbersome antiquity kept in a coach-house near at hand, coupled on the hose, and worked with a will while the "gaffer" sprayed a long border, and a large plot as well, ere Sol's rays could work mischief. They were the only Potatoes unscathed in that locality, but I must admit it was the only fire engine too. However, it is surprising what can be done with a garden engine, syringe, or even a waterpot and rose to quench the "burning." It is an old-fashioned remedy, and perhaps worth remarking that years farther back than then I helped to drench the plants in a greenhouse which had, through a breakdown, been frozen stiff in the pots. In this case the house was darkened by mats, blinds—anything to hand; and for several sharp nights following the frost was kept out by a few candles kept burning. Results exceeded expectation, and I was impressed by the value of the remedy.

I do not know of any phase of work in which the old aphorism "necessity is the mother of invention" is more relevant than to that of gardening, or of any men better able to emphasise it than gardeners. I think young fellows are the better for having served under men who can show them how prompt action springs from dire necessity. Who shall tell what a night may bring forth? None, truly; but there are not wanting those who think it expedient to inquire of Nature herself what little surprises she may have in store. Bright skies with a high midday temperature are not uncommon at the end of May; but a passing cloud from afar patters down the merry little hailstones, telling of a cold strata ready to descend at midnight. Or, it may be, on the distant horizon a dark cloud with ominous streaks descending

gives portentous signs. It is hail. There is no mistaking it by the watchful eye, and when hail is about frost is at hand. "Oh! I'll chance it!" is a very common expression on a doubtful night from men to whom knowledge comes but wisdom lingers. "Short of mats." "Litter is untidy." "Didn't think it would freeze." Any amount of pegs in the garden handy for excuses, but necessity can provide some queer coverings, even to blankets off a curator's bed, but "that's another tale," as Mr. Kipling would say.

"The best gardeners are the biggest grumblers" has been said. The farther one goes in gardening, and the more one knows of gardeners, is any doubt of its relevancy removed. Anticipating what a season may bring forth, a spell of drought is met. "Just when I didn't want it; ground baked, can't get out the green stuff." Here is a wrinkle for it. Blend up fresh cow manure with water to the consistency of cream, and as the plants are drawn from the seed beds, dip in root and stem ere dibbling them into position. I have seen acres of Broccoli and Brussels Sprouts thus treated holding their own till the change came which sent them ahead. That charming feature of English gardening, the lawn, is often marred in rather important positions by bald spots under trees. Where this trouble is apparent now is a good time for sufferers to test what others have proved to be a remedy, even in bad cases. Sow grass seeds on the bare places, on a little fresh soil if the labour is not grudged, and sow liberally with the seeds some malt-combs, which can generally be obtained at any brewery. When the blades are fairly strong, dust more of the malt-combs through them and note the effect of this restorer on bald patches.

Now is a good time to think of the treatment of that popular plant, the Calla, for next winter's display. One who grows 2000 for market purposes gave me a wrinkle. He has found his method the easiest, the cheapest, and the best for producing fine spathes from autumn till mid-May. At the latter period his method is to plant them out rather thickly in a sheltered part of the garden, and in a fairly cool position, all double crowns being divided. From thence till September nothing more is done for them, when they are lifted and potted singly into 7 or 8-inch pots, according to size, and removed under cover. With a night temperature of 50° fine spathes are produced freely through the winter. Potted, as they are, in rather poor soil, an occasional sprinkle of chemical manure in the spring is beneficial, but stimulating liquids are vigorously excluded. One year only was the drainings from a "midden" given to the plants in February, resulting in a crop of gigantic leaves, with fewer and smaller blooms.

Chemical manures, such as are in general use for garden purposes, appear to be infinitely preferable for flowering plants; whereas the home-brewed liquid manures, or drainings of the "midden," seem better adapted for promoting leaf development and growth. This in relation to pot plants. Perhaps the often overfed Chrysanthemum may be included in the category, for troubles are not unknown in connection with the subject. *Apropos* of the common Calla, or *Richardia æthiopica*, is it generally known that there are two forms of it? My friend, "The Busy Man," who has done so well with it for years, first called my attention to the matter. The one he grows and swears by has a reddish tinge at the base of the leafstalks; the other he once grew, and swore about, I fear, is quite green without a suspicion of red. It is shy and generally unsatisfactory, or, as he puts it, "doesn't pay."

A wrinkle would be acceptable about Ivies. Some twenty years ago I planted a number of Ivies on a newly restored church in a country village, "far from the madding crowd." They consisted of three or four varieties, all green, the names of which I cannot give, but they were all more or less finely cut and particularly distinct in character. After an absence of some years I recently visited the spot, and found that they had not only grown apace, by reaching to the top of the edifice, but had also grown out of all knowledge, having lost all trace of birth or breeding, being just common Ivies, and no more. Can anyone elucidate the mystery? It may be added that I propagated them from cuttings, and that they were well rooted plants when planted; also that I saw them taking a good grip of the building ere the interregnum came.

How many times has the "varmint" raised a wrinkle anent newly sown Peas, in spite of drastic so-called remedies—Sweet Peas, culinary Peas, all sorts and conditions of Peas. Would one credit that mice could or would enjoy Peas soaked in petroleum, and liberally dusted with red lead? But it is another fact, stubborn though it be. Row upon row thus treated have been destroyed just as the seeds were bursting, and the "varmint" could shell them easily. There was nothing for it but to "trap 'em," and it was a good investment when two dozen "Delusion" traps (an American conceit) were bought and placed along the rows, with a few oats as bait. This trap, a self-setting one (I do not know if it is procurable now), would "catch 'em alive," six at a time occasionally, and often two brace of fat fellows were shaken out of one trap into a bucket of water to expiate their crimes. No trap we ever used was better proof that their schemes

"gang aft aglee." For rats a little sulphur paste on bread generally proves a quietus, as well as being a fairly safe remedy.

Peacocks have not much to do with gardening—for those who are not the happy (?) possessors of them. We have a couple, fed on a pound of good beef per diem, besides other addenda to their menu, and it seems just sufficient to brace up their appetites for a good square meal off the better class of hardy plants. These they go for "tooth and nail" till not a shred remains but the label. There is no wrinkle applicable here, I fear, save to those who contemplate keeping peafowl, then it takes the emphatic form of "Don't." There is an old superstition that these birds are unlucky. It is now part of the creed of—WRINKLER.

FRAGRANT GREENHOUSE RHODODENDRONS.

AMONG the many Rhododendrons suitable for greenhouse culture, those that go to make up the scented group are best known and most popular, for, while anything like a representative collection of species is rarely found, there are few gardens of any pretensions that do not boast some of those now under notice. The group consists of the following species, and a large number of hybrids which have originated from them:—*R. formosum*, *ciliatum*, *Edgeworthi*, and *Veitchianum*.

R. formosum is a very variable species; it is distributed widely in the Himalaya, and differs greatly in size and shape of foliage and flowers. The form usually met with has leaves 3 inches long by half an inch wide, and is of fairly compact habit. The flowers are 2 inches or more across, white inside, and suffused with rose on the outside of the corolla. Another well known form is that which is often called *R. Gibsoni*. The habit of this is looser, the leaves larger and more hairy, and the flowers of greater size. Others have still larger leaves, are very loose in habit, have the throat of the flower tinged with yellow, and are, if anything, more fragrant.

R. ciliatum is the hardiest of the group, and can be grown in the open air as far north as London if sheltered from cold winds. The leaves and young stems are very hairy. The flowers vary in colour on different plants, some being near those of the narrow-leaved *formosum*, others more creamy; the calyx in this, however, is well developed, which is not the case with the form of *formosum* it most resembles.

R. Edgeworthi has possibly been used more than any other by the Hybridist. In appearance it is very distinct. The leaves are from 3 to 4 inches long and more or less ovate, with recurved edges. The upper surface is very deeply veined, giving the leaf a wrinkled appearance, while the under side, as well as all the young wood, is thickly covered with a light brown felty pubescence. The flowers are very sweetly scented. They are borne in loose trusses of from two to four flowers each, and are from $3\frac{1}{2}$ to $4\frac{1}{2}$ inches across. The colour is white, with occasional faint marks of rose on the outside and pale yellow on the inside of the corolla. A figure of this may be seen in the "Bot. Mag.," t. 4936.

R. Veitchianum was introduced by Messrs. Veitch of Exeter from Moulmein, and was first exhibited by them in May, 1857. The leaves of this are almost glabrous, but covered—especially on the under surface—with small brown scales. The flowers are white, 3 to 4 inches across, and the edges of the petals are very finely crisped. This species comes near *formosum*, and is considered by some botanists to be only a form of that species.

Many hybrids have been raised from these species; and several of them show slight difference one from the other. The prevailing features are large open flowers in small trusses, white, with sometimes green, yellow, or rose markings in or outside the tube, and all very fragrant. Possibly the best of all is *R. Fosterianum*. This is a hybrid between *Edgeworthi* and *Veitchianum*, and is a worthy offspring of two such beautiful parents. The foliage is intermediate between the two. The flowers take more after those of *Edgeworthi*, but are produced with greater freedom, and show themselves off better. They are borne in loose trusses of from three to five, are very fragrant, white, with light yellow marks on one side of the throat, and often 5 inches across. When fully expanded, the flowers from a distance remind one strongly of a large Lily. Other good varieties are Lady Skelmersdale, Lady Alice Fitzwilliam, La Belle, Countess of Sefton, Countess of Derby, and a host of others.

Before closing mention should be made of *R. Countess of Haddington*. This is a hybrid between *R. Dalhousiae* and *R. formosum*. It has the long tubular flowers of the first named species, but instead of being yellow they are bright rose, and, like the other parent, sweetly scented. It is a good grower, flowers with great freedom, and is without doubt one of the most useful of the group. As these plants can be grown with ease, and only require sufficient protection to keep away frost, they might with advantage be used on a large scale, either as pot or border flowers, the beauty of their fragrant flowers fitting them well for decorative purposes.—W. D.

SOME SWISS FLORA.

To the botanist the mountains around the lake of Lemana or Geneva and up the Rhone Valley offer a fine field for research, and one rarely excelled in variety. From February to June there is a ceaseless supply of wild flowers in their season if one seeks for them in their proper habitat. The Crocus, mauve, white, and particoloured, is very early in its appearance. Indeed, directly the snow melts off the lower plateaux this charming little flower is seen on all the hill slopes for several thousand feet. They last well on till the end of April, and in the autumn spread forth a second supply. The Cowslip, Primrose, and Oxlip come next, and are in full swing by the middle of March, when also the Anemones begin. At this time the Violets, lavender, white and deep blue, the latter very richly scented, are broadcast in many parts, chiefly where there is some wooded growth about.

In March, too, the lovely little delicately scented Grape Hyacinth abounds in the bare ground of the vineyards and on grass slopes not too far up the mountains, and towards the end of the month the perfect blue Gentian, rather high up. Both the small and the large kind are found in their special haunts. Late in March or early in April the stately Daffodils, in the few places they favour, glorify their quarters with their wondrous wealth of gold. By the end of April and May the climax is reached when in parts whole patches of Lilies of the Valley, Orchids, Ranunculus, and Narcissus raise their elegant and perfumed heads. The last named around Les Avants are literally mown down by the peasants, in such quantity do they grow. I make no mention of the immortal Edelweiss and other flowers, rare or difficult of access, all the foregoing being of general growth and within easy reach of anybody of ordinary walking powers. There is a peculiar charm in these alpine flowers.

In the first days of April I went up to Noville, an Alpine village a few thousand feet up a narrow valley, the furthest side of the lake, and found many beautiful specimens already named; and up a gorge off the Rhone Valley on the outskirts of the Dent du Midi, on the Chamonix route, a small party of us revelled in the delights of carpets of Hepatica, blue, and also the rarer white, perfect masses of the sweet-scented Violet, the yellow Marsh-mallow, clusters of small pink Primulas, Crocuses, the close growing golden Rock Rose, Pansies, and another very beautiful flower, the name of which I know not, some white, and others mauve or striped. I have rarely spent such a delightful half dozen hours as in this alpine climb among the flowers, protected from the sun of a cloudless sky by the sweet Pine-clad slopes, and with an appreciative and intelligent English lady, whose love for flowers was also very great. For my part I presented my share of the Hepaticas and sweet-scented Violets to *vis-à-vis* at table d'hôte.

An excursion up another "shoot" of the Rhone Valley towards Châtaign D'Oex revealed some kinds we had not found before, and included Periwinkle, pink Hepatica, yellow Anemone (found in but few places, I believe), Snowflakes, masses of Gentian, shrubs of purple Daphne, and a flower something like the Star of Bethlehem, but yellow, several blossoms growing on same stalk. The latter we found in a marshy spot about 3000 feet, growing among the Snowflakes, which were almost over.

In closing, a word on the fruit trees round about this part may not be out of place. Both in the small garden plots in Montreux and in the orchards in the rich alluvial soil of the Rhone Valley, I was much struck with the profusion of blossom. It was quite an exception to see a tree of any kind, whether Cherry, Pear, Apple, Plum, or Apricot, without masses of blossom on every part. Whether the promised crop sets and comes to maturity or not I cannot say, but the signs of fruitfulness are most remarkable. I noticed both in the valley and pretty high up the extensive cultivation of the Walnut, and last, though not a fruit tree, an occasional Magnolia; now and then a really massive tree made a beautiful appearance to the eye.—J. A. CARNEGIE-CHEALES.

— THE REIGN OF THE CARNATION.—Dame Fashion is a fickle mistress, and under her sway the popularity of flowers rises and falls. Just now the Carnation occupies a lofty pedestal both in this country and across the Atlantic. A few years ago the devotion of whole houses to Carnations was a thing unknown, and the variety among these flowers extended no further than to the few grown in the beds. A new order of things has sprung into existence, and apart from the popular Malmaison section, the perpetual flowering varieties are much in demand. In many large establishments now Carnations are a speciality, houses are devoted to them, and blooms are obtained practically all the year round, while in smaller and less pretentious places you find that something else has been done away with to make room for more Carnations. All this has had the effect of bringing forth the best efforts of raisers, and a really up-to-date collection of Carnations in pots is a most interesting sight. Though the Carnation is accommodating, the plant is exacting. Given the treatment it requires nothing can be more satisfactory; withhold it, and the result is disappointing. Allowing all this the flower has a firm hold on public taste, and as far as one can see it is a hold that will last.—G.

BRODIAEAS.

THESE are, indeed, very showy plants, especially the Vegetable Fire-cracker, which, I believe, is the Yankee name for coccinea. This species is so distinct from all other flowers that when once known it is not easily forgotten. Brodiaeas, although closely resembling various species of Allium and Tritelia, nevertheless have a distinctness which renders them very desirable. They are easily cultivated either in pots or in the border. A few of them increase abundantly in their favourite spots, and they are extremely pretty in masses. Coccinea is perhaps the tenderest of all, but it will stand outside all the year if the position it occupies is well drained and facing south or west. The precaution, of course, can be taken of lifting the bulbs and potting them, so that they can be put in a place of security for the winter. It richly deserves such a small amount of attention.

Most of the other species to be mentioned require little attention if planted in moderately rich light soil; in fact, every lover of hardy flowers should have a special border prepared for the reception of choice hardy bulbs. In preparing such a border it is necessary to insure drainage and a good depth of soil, which of course can be qualified to suit the several and variable requirements of any particular set of plants. The Brodiaeas are all natives of North America, confined for the most part to the Western States. *B. coccinea*, represented by fig. 87, is a handsome species. The flowers are fourteen to sixteen in number, tubular, the tube from 1 to 1½ inch long, about half an inch through, of a deep reddish crimson colour. The scape is from 1 to 3 feet high. It is a most distinct and handsome species, flowering very freely and well adapted for pot culture or for a small border. It is not quite so hardy as most of the other species, but if the bulbs are planted deeply and the surface of the soil slightly covered during the winter it will be safe. *Grandiflora* has very narrow leaves, nearly round. The flower scape is from 5 to 12 inches high. The tube is of a purplish-blue colour. It is a very handsome, free-growing, and hardy species, flowering in July and August. I should add that coccinea blooms in the open from June to August.—T. R.

VENTILATION.

To know how and when to ventilate can only be mastered by carefully observing its effects upon different plants, together with a thorough knowledge of the constitutions and requirements of the plants being treated. The quantity of air we can give a house of plants will also very much depend upon how we begin with them, and the time of year they are started into growth. A number of Melons, for instance, planted in January must of necessity make their growth with very little ventilation, and that helps to render their leaves thin and fragile, consequently they must be more carefully ventilated than those planted two months later, because, to begin with, the latter would have more light and air, which would result in a robust constitution, and hence be capable of enduring sudden changes of temperature with impunity.

There are very few operations more difficult to teach young men than that of ventilating, simply because they fail to realise its importance further than to prevent the rise or reduce the already too high temperature. Very much more than that, however, is included in "giving air," for the manner in which it is done often determines the difference between a healthy and a sickly house of plants, while it is certain we should hear of and see less mildew, red spider, aphides, and other insect pests if the ventilators were always rationally worked.

Like many other gardening operations, it is impossible to give detailed instructions for ventilating that can be strictly applied under all circumstances, hence only a few general principles can be pointed out, and some practical observations made upon them, while these will be useful in proportion as they are intelligently applied. Medical advisers tell us that it is not when becoming hot, but when cooling, that the system is the most susceptible to chills, so that after getting hot we should try to reach the normal temperature gradually and uniformly, hence we ought to avoid draughts. Now, experience proves that these remarks are to a large extent as applicable to plants as animals, so that we do not think of taking plants directly from hothouses to the open air, but we prepare them for the change by "hardening them."

The fact that many plants can be grown so well without ever opening the ventilators proves that high temperature does not injure them, and the grower should bear this in mind when he has neglected to open the ventilators, and the temperature has run up to 20° or 30° too high; he should remember that the evils which follow will very much depend upon how he manages the ventilators, and nothing should induce him to let in a large volume of cold air. Far more care is needed in ventilating when the temperature has been allowed to rise too high than when ventilated at the proper time, because the air that would be comparatively warm, or just cold enough to be invigorating in the latter case, would be chilly, and often productive of baneful results in the former.

The aim should be, under such circumstances, to reach the normal temperature as imperceptibly as possible by opening the ventilators

gradually. Not more than a quarter of an inch must be allowed at first, and this should only be at the top of the house, unless the bottom ventilators allow the air to circulate round the hot-water pipes before coming in contact with the plants. Even then the top and bottom ventilators should not be open at the same time until after the proper temperature be reached, for that would create a draught, which is always injurious, more especially to over-heated plants; indeed, according to my experience the bottom ventilators are better kept closed, except in houses where plants have finished their growth, or on very warm still days. They are certainly better closed in the early part of the year if we wish to be free of red spider.

But the rational use of ventilators is not to reduce but to prevent the rise of temperature beyond a certain point, so that on favourable days a little air should be admitted as soon as the temperature begins rising, and it ought to be gradually increased as required. Sudden checks must be avoided in fruit and plant culture, for nothing is more productive of insect pest and disease. We want, if possible, to supply our houses with fresh air without creating a draught, and without unduly lowering the

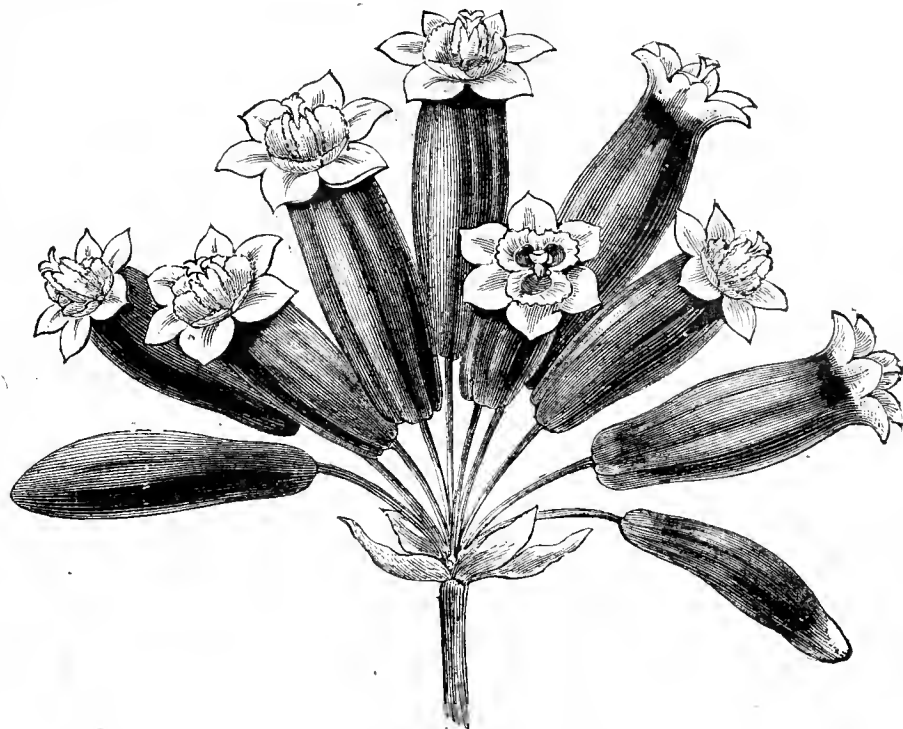


FIG. 87.—BRODIAEA COCCINEA.

temperature, but this can only be effected with the ordinary arrangements by the exercise of care and forethought. It may seem superfluous to say that more air will pass through an inch space when the wind is rough than would pass through a foot when it was still. The direction of the wind should always be noted, especially when it is rough, and if possible ventilate from the opposite side.

There are days, however, when it is better to allow the temperature to rise considerably than to open the ventilators. There is nothing more trying for forcing than hot sunshine with a high scathing wind, or alternate hot sunshine with sudden cold storms, and that especially after a period of dull weather. On such days I prefer keeping the fires low and the ventilators nearly closed, with plenty of moisture, and for tender plants shade. This I find much better than opening the ventilators during such trying weather, which require very great care and constant attention, or, to say the least, an attack of red spider would be the result. Low span-roof houses are best ventilated through iron grates fixed into the wall a little above the ground line, and just under the hot-water pipes, and if more air be wanted open the doors at one or both ends as required. Plants very much object to a stream of air flowing directly on them; it often has the effect of drying and stunting them, and this cannot be avoided if top ventilators be used in low houses, hence the advantage of grates and opening the doors. Top ventilators, however, should always be provided, as they are useful during hot still weather.—PRACTICE.

RATES FOR GARDEN PRODUCE.—We observe that the South-Eastern and Chatham and Dover Railway Companies have decided to adopt the system of conveying farm and market produce at low rates between various stations, the conditions to be enforced being—that the produce shall be packed in the boxes on sale at the different stations, or similar ones; that the boxes shall be secured by nails, and not by rope or cord; that the produce shall be conveyed at owner's risk, and the carriage prepaid, the prepayment being made by parcels stamps on sale at the stations; and that no box shall be of greater weight than 60 lbs. If these conditions are fulfilled, the produce will be conveyed at 4 l. for every 20 lbs. and 1 d. additional for every 5 lbs., or part thereof, up to 60 lbs. (including delivery within the usual limits), from all stations (except those within twenty miles of Charing Cross) to Birchington, Broadstairs, Deal and Walmer, Dover, Folkestone, Hastings and St. Leonards, Herne Bay, Hythe, Littlestone, Margate, Ramsgate, Sandgate, Westgate-on-Sea, and Whitstable, and also from all South-Eastern and Chatham and Dover stations to London and stations in the companies' suburban district. The boxes are to be sold at the stations at prices ranging from 1½ d. to 5 d.

SOME LITTLE KNOWN COMESTIBLE PLANTS.

Le Potager d'un curieux Histoire, Culture et Usages de 250 Plantes comestibles, peu connues ou inconnues Par MM. A. PALLIEUX ET D. BOIS.

THE third edition of this work, describing little known edible plants of foreign countries, entirely re-written, with eighty-two figures, has just appeared; so it has been thought that a selection from the plants described might not be uninteresting to the readers of this Journal; for the authors, by means of an enormous correspondence with official and other persons in all parts of the world, have collected a vast array of interesting facts. The plants are, unfortunately, arranged alphabetically, so that if one wish to take all those mentioned of any particular natural order together, it involves the picking out the different genera separately from the index. Following the order in which they stand in the book, we come to:

Aponogeton.—*A. distachyum* (Thunb.), a native of the Cape, is quite hardy in this country. It has a remarkable rhizome, covered with globular tubercles. Mueller describes it as being naturalised in Australia, the tubercles being edible there, while the flower-stalks supply a substitute for Spinach. The authors think the tubers, though fine and white, are too compact, and carry a disagreeable taste of the mud in which they lie. They might be used for the starch which they contain. *A. monostachyum* (L.), and other species afford a food much enjoyed by the natives of India.

Bambusa.—The young shoots of several species of Bamboo are eaten in Japan, including *B. Metake*. They are cooked like Asparagus or pickled. The Chinese dry them and export them largely to Manchuria and Mongolia. Then, after being soaked in hot water, they regain their former size.

Lappa.—The "Bardane du Japon" is a variety of our own Burdock, *Arcetium Lappa* (L.). This is said to be eaten in Scotland, both leaves and young shoots. It is called Gobô in Japan, and is generally cultivated. The figure given shows long Radish-like, simple and branched roots.

Tropaeolum.—*T. tuberosum* has pyriform tubercles resembling a moderately sized Pear. They are used for food in S. America, but Europeans fail to appreciate them in consequence of their being acrid and having an unpleasant odour. It is said that they should be frozen and then cooked, when they become palatable.

Claytonia.—*C. perfoliata* (Willd.), a native of N.W. America, is spreading and becoming naturalised in many places of England. It is an annual, with connate funnel-shaped leaves. It is described as a useful plant in lieu of Spinach, or as a refreshing salad.

Cucumis.—*C. sativus* var. *sikkimensis* (Hook, fil.). The Sikkim Cucumber is cultivated in all India, but especially in Sikkim. The fruit is ovoid like a Melon or Vegetable Marrow, and has five placentas instead of the usual number, three. It is yellowish-white and red in colour, and might prove to be a valuable addition.*

Stachys.—*S. affinis* (Bunge). The so-called "Chinese Artichoke" has a long account. It is cultivated in several provinces of China, but is rarely so in Japan. It is now much grown in France. It cannot, however, approach the Potato, the reason probably being that instead of starch, this is to a large extent represented by galactane, of a character intermediate between starch and sugar. This, however, renders it more assimilable than starch. It is suggested that our own species *S. palustris*, of which *S. affinis* may be only a variety, might be cultivated, but it has longer rhizomes, which would require some amelioration, as they are bitter.

Raphanus.—*R. sativus* (L.) var. "Daikon" of Japan. Of this Radish there are several forms, of which three are figured, one being Pear-shaped, and another like a Cucumber. The figure is $1\frac{1}{2}$ inch in length and 1 in breadth, while the latter is $3\frac{1}{2}$ inches in length. These, however, are one quarter the natural size.

Foeniculum.—*F. dulce* (C. Bauh). The Sweet Fennel of Italy is believed to have been introduced there from the Azores. Earthed up, the broad bases of the leaves become white and tender. One disadvantage is that the seed degenerates, and must be secured fresh from Italy every year.

Petasites.—*P. japonicus* (F. Schmidt), is a representative of our Butter-bur. It is much eaten by the Ainos of Japan. They use the petioles, roasted or boiled, also pickled and as conserves. The flower spikes, which come up before the leaves, like those of our species, and of its ally the Coltsfoot, are also eaten, but the taste is rather bitter, though the odour is pleasant. The authors, however, do not appear to be able to recommend them.

Mesembryanthemum.—*M. crystallinum* (L.). The Ice Plant is an old-fashioned garnishing plant, ornamental in consequence of its minute globular water-glands, which give it a cool glistening appearance. The tender shoots and leaves may be treated like Spinach, and have an agreeable flavour of their own.

Phaseolus.—This genus affords many useful species, besides our Kidney Beans, Scarlet Runner, &c. Thus *P. Tunkinensis* (Loureiro) is cultivated for its seeds in Cochin-China, but requires a higher temperature than France or England can supply. *P. Ricciardianus* (Tenore) is a yellow-flowered species of China, remarkable for its extreme fecundity, but is rather tasteless. *P. Mungo* (L.) has many varieties. It is of Asiatic origin, and generally cultivated in India, Japan and China, where it is made into a fine vermicelli. It has been grown in France since 1878, and ripens its fruit yearly.

Dioscorea.—Numerous species of this genus are cultivated, one of which is the well-known Yam. The genus is indigenous in China, where three species are cultivated, including the Yam, *D. Batatas*. *D. glabra* (Roxb.), is cultivated in India and much esteemed. Of course they all require a hotter climate than England.

Amorphophallus.—*A. Rivieri* (Durien). This Aroid has a tuberous root and a stem carrying three much-divided leaves. It is nearly 3 feet in height. It probably originated in the south province of Japan. The spadix is surrounded by a red spathe. Stolons arise from the eyes in the tubers, which swell at their extremities, just as Potatoes. It will bear fifteen tubers.

Erythronium.—*E. dens-canis*, the Dog-toothed Violet, is known to all lovers of spring flowers; the variety of which, *grandiflorum*, is, according to the authors, a native of the south of Western Siberia, where it is widely collected and the bulbs are eaten, as well as sent to the Court of St. Petersburg.

Lilium.—Several species afford edible bulbs in Siberia and Kamtschatka—e.g., *L. tenuifolium* (L.), *L. Kamtschaticum*, *L. spectabile* (Fisch). *L. auratum* (Lindl.), wild in Isles of Nippon and about Yokohama, affords useful edible bulbs. So also does *L. speciosum* (Thunb.). Other edible Lilies are *L. Thunbergianum* (Ræmer et Schultz), *L. tigrinum* (Gawler), &c.

Tulipa.—Numerous Tulips cover the Russian steppes. One species common by the Don, allied to *T. suaveolens*, is eagerly sought after as edible by the inhabitants, but they never eat the others. Aitchison says that the bulbs of *T. montana*, which covers the arid plains of Afghanistan, are also eaten, adding that, deprived of their outer skins, the bulbs are sold in Bombay as "Salep." This name, of course, really belongs to the tuberous roots of terrestrial Orchids.

Plectanthrus and *Coleus*, genera best known to us for their variegated foliage, have also edible species. Thus, *P. ternatus* (Sims) ("Bot. Mag.," t. 2460) is called "Matambala" in Madagascar, and furnishes edible tubercles, which yield ten to twenty for each one sown. *Coleus tuberosus* (Benth.), is cultivated in the Malay Archipelago and Ceylon. Other species of both these Labiates are elsewhere cultivated.

Lycopus.—*L. lucidus* (Turcz), allied to our own Gipsywort (*L. europæus*) has tuberous rhizomes, which are used by the Japanese.

Sinapis.—*S. juncea* (L.), var. *napiformis*, has short conical and swollen roots. These form an important article of food in China.

Nelumbium.—*N. speciosum* (Willd.), the Lotus of the ancients, is a native of S. Asia, introduced ages ago into Egypt, where it has since become extinct. Both the rhizome and the grains are eaten in Japan; the former is said to resemble in taste the Radish, Cardoon, and Celery combined, while the fruits taste like Nuts and Almonds.

Euryale.—The only species, *ferox*, of this genus, represents the Victoria Regia in India. Both rhizome and grains are used for starch.

Nuphar.—*N. advenum*, the N. American representative of our yellow Water-Lily, affords a rhizome which is collected by Indian women of Dakota, and eaten with wild birds, and also stored up for winter use.

Nymphaea.—The ancient Egyptians made bread of the seeds of *N. Lotus* of the Nile, the rhizome being still eaten as Potatoes.

Oxalis.—*O. crenata* (Jacq), affords the tubers of an orange colour called Oca. It was first imported into England from Lima, South America, in 1829. The leaves can replace Sorrel.

Brassica.—*B. chinensis* (L), the Chinese Cabbage, is much cultivated and highly esteemed; it grows like a Kale, refusing to form a head. It is of great use in dry seasons in Bourbon, since it resists drought more than any other similar culinary plant.

Lactuca, *L. sativa*, vars.—Lettuces from the Pamir. These would seem to be likely to prove useful additions to our stock. The principal stem grows slowly, in consequence of the numerous side shoots which surround it. These are taken off, and furnish an abundance of excellent salad.

Crocus.—*C. cancellatus* (Herb.). This is eaten in Persia, the corms of which are said to taste like Chestnuts.

Sagittaria.—Varieties of our Arrowhead, *S. sagittæfolia* (L.), are grown in China for the globular tubercles. They are odorous and aromatic, though possessing a bitter milky juice. This is dissipated when boiled.

Besides the preceding the authors describe numerous species of *Solanum* and *Physalis*, and a large number of genera of *Cucurbitaceæ*; but the plants mentioned are of those genera with which our readers would most likely be familiar.—GEORGE HENSLow.

* It is figured in "Bot. Mag.," January 1876, pl. 7206.

LIVERPOOL NOTES.

AMARYLLIS AT AIGBURTH.

It was my good fortune a short time ago to visit Messrs. R. P. Ker and Sons, Aigburth Nursery, Liverpool, and to inspect the collection of *Amaryllis*, for which the firm is famous.

Having watched their progress for several years, and the improvement in form, habit, and floriferousness, one would have thought it almost impossible to advance much further, but progress seemed to be written over all. If only one had to be mentioned to support my statement that would be quite sufficient, as the long sought for pure white is at last found—a very small bulb, throwing a spike which was without marking of any kind. Nor is this all, for numerous new shades are appearing, but they are at present unnamed. In striking contrast to the present day varieties was one of the old types in bloom from Bermuda, insignificant but sufficient, to show the care and attention paid to the crossing of the new varieties. Most of those in flower were bearing two spikes, with from two to eight flowers on each.

I noted a few varieties particularly choice in every way as regards habit, colour, and form of flower:—*Cassandra*, reddish scarlet, white star and bands; *Bacchus* and *Imperial*, rich deep crimson; *Monarch*, fiery scarlet with rose bands; *Magnificent*, deep crimson with salmon suffusion; *Scarlet King*; *Virgin Queen*, white striped deep crimson; *The Queen*, beautiful rounded form, almost pure white; *Pink Queen*, glowing deep pink, very handsome colour; *Melpomene*, light ground, heavily veined red; and *Saturn*, lighter ground with red veins on upper petals.

It is to the credit of Messrs. Ker & Sons that they should take in hand a flower that has such a hold in the Liverpool gardens, *aulicum*, *equestre*, *psittacinum*, *Reginæ*, and others having been brought over by the Liverpool merchants, and flowered in their gardens. Again, at Prescott, eight miles from Liverpool, the useful and the first recorded hybrid, *A. Johnsoni*, was raised by a clockmaker named Johnson; whilst at Hurst House, near Prescott, the late Miss Willis, a celebrated horticulturist, had a choice collection, as had also the late Rev. Thos. Staniforth of Storrs Hall.

In growing *Amaryllis* too many persons think that almost any culture will suit, but to bring about success the routine, although simple, must not be neglected. As the plants go out of flower the warmest part of a greenhouse should be chosen, and copious supplies of water given until August, when it may be withheld, and the bulbs allowed a period of rest. Early in October the pots should be laid on their sides under the stage. If wanted to bloom in December or January place in a temperature of 60° or 65°. For later flowering start about the middle of January, giving a temperature of 50° to 55°, watering carefully at first. If the bulbs require potting see to it just previous to starting them, using two-thirds of good loam with one-third of leaf mould and silver sand.

HONOUR TO A LIVERPOOL HORTICULTURIST.

It will be gratifying to the many friends of Mr. R. Wilson Ker to learn that he has been chosen to adjudicate at the exhibition now being held at St. Petersburg. In addition to the above honour, we Liverpool people appreciate his election on the Floral Committee of the Royal Horticultural Society. Nor is the journey to Russia to be one of pleasure entirely, for although there is something like 2000 miles to be traversed, the above gentleman and his brother, Mr. A. W. Ker, have taken with them seven specially constructed cases containing selections of the *Hippeastrums* referred to in the above notes.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.

Last Thursday evening the Liverpool branch of the above Society held its monthly meeting, when some very good exhibits were brought by members, but more especially the Orchids by Mr. Drake, whose blooms of *Cattleya citrina* were awarded a special prize. Mrs. Drake won the prize for a gentleman's buttonhole, and Miss Hunter for *Auriculas*. Other prizewinners were Mrs. McGregor, and Messrs. Redfern and Gillanders. As usual the lecture for the evening commanded the attention of all present. The lecturer was Mr. J. Cliffe of Waterloo, who chose the subject "Budding and Grafting Roses." In a most business-like manner Mr. Cliffe described the processes of "budding and grafting," and strongly advocated the merits of the budded over the grafted Rose, which latter he advised should never be bought. He gave some very interesting information regarding Stocks. For a dry soil, and where it is necessary for the roots to go deeply in search of moisture, he recommended the seedling Briar, but for all purposes and all things considered, if one must choose, then he would take Roses budded on the Briar cutting. A vote of thanks concluded a pleasant meeting.

DOUBLE WALLFLOWERS.

Whatever objection may be urged against double Wallflowers, we cannot afford to ignore their claims at this season of the year. Two beds filled with dwarf bushy plants, carrying spikes some 12 to 15 inches in length, of all shades of brown, claret, purple, and hosts of intermediate shades, are now delighting us with their handsome appearance; the foliage, too, which is much more striking than in the single varieties, greatly enhances their appearance. For bedding purposes they are invaluable, and as the season for sowing is almost at hand I should recommend a packet to be purchased. When planting out give more space than for the single varieties. To get the best results from them they should be transplanted, and sufficient space given to allow of perfect development, and when planting-out time comes round, each plant can be lifted with fine roots, and receive no check. By adopting

this system there will scarcely be a feeble plant. Another detail is, when the winter is past the plants will have become somewhat loose about the stem. Fill in the spaces, making the ground firm, give a slight top-dressing of artificial manure, or water with liquid, when spikes of flower almost double the size will be the result of this small attention.

THE WEATHER AND THE FRUIT CROP.

Frosts of various degrees, but of sufficient intensity to blacken, and from reports from the Cheshire district, to destroy acres of early Potatoes and blacken *Rhododendrons* in flower, have been the order for the past few days, and it causes serious misgivings as regards the Pear, Cherry, and Plums, which have been in full flower for the past fortnight. It will be a great disappointment if we have a short crop again this season, as in many instances last year it was almost nil. Apples are not in full blossom, and so we hope that this, our most useful of fruit, will be spared the rude blasts of the cutting winds of early May. Currants, Gooseberries, Raspberries, and Strawberries are grand in appearance.—R. P. R.

PINCHING FRUIT TREES.

I THINK pinching to a certain extent assists in fruit bud formation, provided, as Mr. Luckhurst says, the work be done rightly and at the proper time. I venture to say that trees from which barrowfuls of shoots have been cut each season for years, and still produce few or no fruit buds could—in the course of, say, two years—be made very fruitful by pinching, in conjunction with other processes for preventing an excess of sap forcing its way into a thicket of gross shoots. By checking this excess of sap through having the roots under proper control, I can then pinch, and prevent an excess of barren shoots, in faith of helping to form fruit buds.—H. MITCHELL, *Druidstone*.

As far as I can glean from the various opinions already expressed, there are not many gardeners in favour of summer pinching. I trust pinching will not be confounded with summer pruning, or perhaps the discussion may prove a hindrance instead of a help to those who are hoping to profit by it.

I have been experimenting for some few years, and at one time I thought I could bring young trees into fruiting earlier by continuous pinching. The idea was to prevent strong roots by preventing strong growths, and thus get fruit buds on the current year's growth. I succeeded with some varieties, but not others, and not sufficient with any to pay for the extra labour. I took the points of the shoots out when they had made five full sized leaves, and the sixth was half developed. All other shoots were stopped to one leaf as soon as that leaf was formed. Shoots would grow out from three, and sometimes four of the leaves, and a fruit bud would sometimes form at the next leaf below the lowest shoot. These remarks apply more particularly to Apples.

Summer pruning I consider essential to all fruit trees which are winter pruned. In Apples and Pears I consider the best time is when the points of the shoots show signs of growth ceasing. Pears about the end of June, Apples about the end of July. But they differ according to season, soil, and variety. Summer pruning causes fruit buds to form on the previous year's growth, that is, the dormant buds below the shoot or shoots which have been pruned back, also on the old spurs which would have been smothered and too weak if summer pruning had not been done.—J. L.

[We are inclined to think that enough has been said at present on the general question of pinching, which has been confounded in some instances with summer pruning, and would now ask our able practitioners and others to consider a few definite questions, and under the heading of "BLOSSOM BUD FORMATION" explain in separate paragraphs—

1. What is a blossom bud?
2. How it is formed?
3. What helps, and what hinders, its production?
4. If, and in what way, a blossom bud can be changed into a growth bud?

Some of our friends occasionally say they would like to contribute more frequently but feel at a loss for a subject. They have one now; and with those questions correctly answered, we suspect the philosophy of pruning will be better understood. In the meantime we thank all our correspondents (some of whom have still more to say) for the many useful hints they have given in the several communications.]

BLACKTHORN WINTER.—It does seem as if this touch of wintry weather, which comes in with the blooming of the Blackthorn, or thereabouts, never can be evaded. Certainly southwards the touch of cold keen easterly winds, with sharp white if dry frosts at night, came this year a little later than usual, and Plum bloom was largely over, but it caught the Cherry and Pear bloom in its greatest profusion. If the fertile organs of this have escaped harm all the same, certainly it will be wonderful. There is not only a great bloom, but there is far too much. If frost has killed one-half of it there will be plenty left, but then it is the bloom which might have set best and produced the finest fruits, that possibly may have been killed. We shall soon be hearing from many directions, as to the effects on the fruit bloom of the latest touch of Blackthorn winter.—OBSERVER.

THE YOUNG GARDENERS' DOMAIN.

THE SHRUBBERY BORDER.

NEARLY every establishment has one or more borders devoted to ornamental trees and flowering shrubs, but how often are these left year after year to take care of themselves, with the inevitable result that they rob each other of their natural beauty. Few borders are more charming when well kept, and if the ground were well trenched and manured, and burnt garden refuse incorporated, before the trees were planted, none would look more beautiful. Newly formed borders, where the trees have vacant spaces between, may be planted with annuals; but these should not be sown or planted thickly. Poppies form a main feature in some gardens, but even a Poppy thrives better with "elbow room;" and therefore should not be crowded, so that one plant produces only one bloom, as is often the case. There are many annuals which can be suitably employed, and give a grand effect if judiciously planted, not forgetting the fragrant *Nicotiana affinis* for an evening display.

Provided the spaces at command are large enough, Dahlias, Delphiniums, Hollyhocks, Foxgloves, Campanula pyramidalis, and Helianthus in variety will add to the general effect. Then, again, bulbs in many varieties, to give an early and late spring display, cannot be omitted, for what gladdens the heart more than these useful and pretty flowers, which tell that spring has come again? For many years after planting, the borders can be kept quite gay from February to November. The annuals, if sown in autumn, will provide a much earlier summer display than when they are sown in early April. But in no case should a mass of self-sown plants be tolerated, or the shrubs will suffer. It will be much the better plan to lightly fork over the vacant spaces between shrubs, and sow the seed in ringlets 1 foot in diameter, both in the autumn and spring months.—FOREMAN X.

DAHLIAS.

WHERE Dahlias are largely grown there are few plants that make a better display, and they are always useful for cut flowers and decorative purposes, especially the singles and Cactus varieties. The object with Dahlias is to obtain large, strong, hardy plants by the time it is safe for planting outside, but of course no hard and fast rule can be made for this operation.

The old tubers that were lifted and stored in the autumn should be carefully examined and placed in a temperature of 60° to 65° at night, 65° to 70° by day, about the middle of January, covering them with cocoanut fibre refuse and giving an occasional damping until they have made a start. When the tubers have made growths about an inch in length some of them may be taken with a little of the tuber attached, and be potted in thumbs if an increase of stock is desired. Do not let the growths get too far advanced before dividing the old tubers; two shoots on each division will be sufficient. Pot them in small or large 48's, according to their size, using a compost of two parts of loam, one of leaf soil and sweet horse droppings, with sufficient sand to keep it porous, affording a temperature of 65° at night. It will be found necessary to lightly damp occasionally and shade the plants when the weather is bright until they have made a good start.

After the plants have produced a fair amount of root they should be removed to a cooler house, 55° at night will be suitable, and a neat stake must be placed to each. It is necessary at this stage to look over them twice daily when the weather is bright, as there must be no lack of moisture, and a little weak liquid manure given occasionally will be advantageous. As time goes on and the sun gains power the plants must go to cooler quarters, but they should be covered at night for some time. Give air on all favourable occasions, and as soon as they can stand being fully exposed remove the lights, but keep them in readiness in case of rough weather.

When the time has arrived for the final planting the large varieties should be placed at a distance of 5 feet, and dwarfier sorts about 4 feet apart, thus giving ample room between them for the necessary work during the summer. Dahlias are gross feeding plants, so in planting it is a good plan to take out a large hole and place a supply of manure in the bottom, covering this with soil before the plants are put in. Make the soil fairly firm by treading around them, and place a stout stake to each. If the weather is hot and dry at the time of planting, or at any time during the summer, they should be supplied with water, and occasionally with liquid manure after they have made a good start. Attend to the tying as it is required: do not let the plants become thick in the centre, for they always thrive better if the air can pass freely between the growths.

When the autumn arrives and the plants are cut with the frost the tops should be removed to within 9 inches from the ground, and the tubers remain for a few weeks with a little coal ashes thrown over them to be thoroughly ripened. The lifting and storing of the tubers must be carefully done, so that none of them gets injured in any way, for if bruised they will be of little use for another season.—P. R.

NEW RÔLE OF THE GERMAN EMPEROR.—The Kaiser is a man of many parts, and according to a weekly contemporary, his latest hobby is landscape gardening. Under his instructions a transformation of the famous Thiergarten in Berlin is taking place. Trees in some parts are being cleared away, making open stretches, and in other places timber trees are being planted in groups in accordance with the idea of the versatile Emperor. It is a compliment to the landscape gardeners of this country, for, as the authority states, he intends to give the place more of the pleasant character of an English park.



FRUIT FORCING.

Cherry House.—The Cherries are ripening rapidly, and they must be kept dry, but moderate air moisture should be maintained by damping the floor with the syringe, air being admitted constantly, or condensation will seriously affect the fruit. The border must also be examined, not being deceived by the surface, supplying water to keep the soil moist down to the drainage. Tie in the shoots as they advance, and stop those required to form spurs at about the fifth leaf. Black aphides must be kept under by dipping the shoots affected in tobacco water, gently rubbing them with the fingers, or their shining bodies will throw off the decoction. Ventilate freely on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to insure a circulation of air. Netting will be necessary over the ventilators to prevent birds attacking the Cherries. Trees in pots should be well supplied with water.

Cucumbers.—Plants that have been in bearing some time, and show signs of exhaustion, had better be removed and their places taken with healthy young plants. Assist any plants that show signs of weakness by removing the staminate blossoms and the first fruits, stopping at every third or fourth joint, removing all superfluous growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially for houses facing south, but shade only to prevent flagging. Houses with the roof-lights facing east and west will not require shading, or only in the afternoon. Little or no fire heat will be required by day, shutting the valves about 8 A.M., and opening them again about 4 P.M. or later, keeping a good moisture by damping the floors.

In Pits and Frames.—Sow seeds to secure plants for placing in pits and frames, a fair amount of bottom heat being necessary, which is insured by using the less decomposed material from exhausted hotbeds, with about a fourth of fresh material; ventilate moderately if the weather is cold, and close as early in the afternoon as safe, running up to 90° or more, and employ night coverings. Attend to the linings with a view to maintain a good bottom heat, but avoid rank steam.

Peaches and Nectarines.—*Houses Started at the New Year.*—The varieties Alexander, Waterloo, and Early Louise Peaches, with Cardinal and Advance Nectarines, are now ripening, and must not be syringed; but Hale's Early, A Bee, Dr. Hogg, Dymond or Grosse Mignonne, Stirling Castle, Royal George, and Crimson Galande Peaches, with Early Rivers, Lord Napier, Humboldt, and Stanwick Elruge Nectarines are only about completed stoning, and must not be subjected to a higher temperature than 60° or 65° by artificial means, commencing to ventilate at 65°, and not allowing 75° to be exceeded without full ventilation. If the fruits are too thick, remove the smallest, apportioning the crop to the vigour of the trees. Draw the leaves aside, or even them, so as to expose the fruit to light, raising such as require it on thin laths placed across the trellis wires with their apexes to the sun. Maintain a good moisture in the house, but never a stagnant atmosphere. Water the inside border copiously, and mulch the surface with about an inch thickness of short, rather lumpy manure. If the fruit is required ripe as soon as possible, maintain a night temperature of 65°, 70°, to 75° by day, with 80° to 85° or 90° from sun heat, but it is better for the trees to continue 60° to 65° as the night temperature, 65° artificially by day in dull weather, 70° to 75° with sun heat, closing at the latter.

Houses Started in February.—The fruit being in the early stages of stoning, should be reduced to two on strong shoots and one on the weaker, not leaving too many, for there is danger of their not stoning in that case, while they will be small if they should stone. Retain in all cases the fruit best situated for receiving air and light. Thin the shoots where crowded, pinching laterals to one leaf, and secure the growths to the trellis as they advance. Syringe the trees twice a day in bright weather, but only once in dull, and not then if the foliage does not become dry before nightfall, or it will be found dripping with moisture in the morning. The temperature by artificial means may be kept at 55° to 60° at night, and 60° to 65° by day, ventilating from 65°, and fully between 70° and 75°. Supply water to the roots as required, affording weakly trees, and those carrying heavy crops, top-dressings of fertilisers occasionally—say every fortnight or three weeks—washing them in moderately, or afford liquid manure alternated with the waterings.

Trees Started in March.—Thin the fruit now that it is swelling freely, and choice can be made of the most promising for the crop. Reserve those on the upper side or front of the trellis; two or three on strong shoots will be ample to leave, and proportionately fewer on weakly growths. Remove all superfluous shoots gradually, retaining those only for attracting the sap to the fruit, which stop at two or three joints, and those from the base of the present bearing wood for furnishing fruit another season, with such extensions as are necessary. Train the growths as they advance, securing them loosely to the trellis. Afford liquid manure to such as require more vigour, but avoid stimulating vigorous trees too much, as that will encourage wood at the expense of the fruit stoning. Keep red spider under by syringing, and if aphides or other pests appear promptly apply an insecticide.

Late Houses.—The fruits have set well, and should be thinned as soon as the best can be decided upon by their taking the lead in swelling. Remove the smallest and worst-placed first, leaving a few more only than will be required for the crops, but regard must be had to the vigour of the trees, and their liability to cast some of the fruit or otherwise in stoning. Disbudding and laying-in the shoots should be carefully attended to, doing the first gradually, and the latter with due regard to the swelling of the shoots. A temperature of 50° at night and 55° by day artificially will be sufficient to keep the trees in steady progress; ventilate freely above that, unless it is desirable to hasten the crop, when a temperature of 55° at night and 60° to 66° by day may be secured, with 70° to 75° from sun heat, ventilating from 65°. Syringe the trees in the morning and on fine afternoons.

Unheated Houses.—Despite the frosts the trees have set quite four times more fruit than they can possibly bring to maturity. Commence thinning them when the size of Horse Beans. Over-burdening the trees in the early stages of the fruit swelling prevents their making wood for another season's crop, while excessive disbudding may cause the fruit to fall or a strong growth to be made. A moderate syringing on fine mornings will be a great assistance in ridding the trees of the remains of the blossoms, but afternoon syringings are not advisable. Ventilate at 50°, not allowing an advance above 65° without full ventilation, and close at 50°, or before if there is a prospect of frost at night.

Pines.—Plants with fruit in an advanced condition require a moderately high and moist atmosphere, but ventilation must be carefully attended to. Admit air at the top of the house at 80°, and maintain the temperature during the day at 80° to 90°, closing at 85°, but unless desired to enlarge the crowns do not quite close the house. Maintain 70° at night and 75° by day, and a steady bottom heat of 80° to 85°. Supply water as often as required, on every occasion employing some stimulant of an all-round nature, such as guano, 1 lb. to 20 gallons of water. Syringe the house and plants two or three times a week, according to the weather, and otherwise maintain a genial condition of the atmosphere for the proper development of the fruit.

HARDY FRUIT GARDEN.

Apricots, Peaches, and Nectarines.—The reduction of wood growths must continue until all unsuitable shoots are dispensed with. Foreright growths cannot readily be fastened in, so should either be cut out entirely or shortened to form spurs. Artificial spurs may be freely encouraged in the case of Apricots, but less so, if at all, with Peaches and Nectarines. Suitable young wood may usually be found to furnish the requisite amount of bearing shoots for the succeeding season, and the chief matter rests in the proper selection of the best placed, retaining only an adequate number for furnishing the space after the present season's bearing shoots are cut out in autumn.

Watering Fruit Trees.—In light, dry porous soils, trees, especially those growing on walls, will require water at the roots to sustain growth, support fruit, and prevent attacks of insects. Old fruit trees are benefited by copious supplies of liquid manure, which will add nutriment to the soil upon which the roots can draw to assist in the development of the crop. Weakly growth in various trees is often the result of poverty of food and moisture. Much good follows from an application of water, but better results are attained when stimulants are applied of a sustaining and nutritive character. Newly planted trees and bushes must have the soil maintained moist about the roots, so that the fibres may extend unchecked in a healthy medium.

Syringing Fruit Trees.—The syringe or garden engine is a valuable instrument in the work of maintaining trees healthy and clean. On walls the attacks of insect pests may be largely neutralised by vigorous cleanings of water well directed against the branches and foliage. The force of the application dislodges the pests, which are prevented gaining a foothold by repeating the operation. Trees and bushes newly planted often break more evenly into growth when the buds are moistened, especially if the weather should be dry and warm.

Mulching Fruit Trees.—The best season for affording a liberal mulch to the majority of fruit trees and bushes is during the present month. After a copious watering, it is not desirable that the moisture should evaporate quickly. This may be prevented if a mulching of manure is applied. For young newly planted trees or bushes against walls, or in the open, the material ought to be of a light, littery character, and not thoroughly decomposed. In the case of well-established trees, short manure is better, as it lies closer, thus retaining moisture more readily. Raspberries, Currants, and Gooseberries soon appropriate the virtues of a generous mulch, and are largely kept in vigour and fruitfulness by frequent renewals. To be effective, mulching must cover the whole area of ground occupied by the roots; this in the case of bush and standard trees extending as far as the branches.

Strawberries.—A liberal layer of equal parts of long and short manure ought to be placed between the rows of established fruit-bearing plants without further delay. The short manure is useful for feeding the roots and conserving moisture in the soil, while the longer material washed by the rain and bleached by the sun forms an admirable resting base for the ripe fruit when that is plentiful.

Moisture must not be withheld from Strawberries where the land is of a porous character. The value of a good mulch is very apparent in such soils. The manure assists in retaining the moisture, and acts as a medium for distributing the water applied evenly and regularly. There is no better way of applying water than over the mulching, and a copious supply of liquid manure may also with advantage be given to plants when the fruit is set.

Training Young Fruit Trees.—The habit of the future tree depends largely on the attention given to training when young. The shape of the tree having been decided upon, it is important that the growths be regulated and trained in the desired direction. Superfluous shoots must be entirely removed. Disbudding may be practised when the growths are not too long, but if extended too far, the best plan is to remove them with a sharp knife. Young trees of Apricots, Peaches, and Nectarines may be allowed to grow freely, merely thinning-out and regulating growths, so as to produce as far as possible an even development. Where there is any difficulty in effecting this, the strong shoots growing very vigorously, they ought to be depressed, and those weaker raised to a more upright position. Weak growths may be thinned from the base of Raspberry stools, suckers removed from Currants, and gross-growing wood taken from any fruit tree producing such.

Destroying Insects.—Aphides are likely to attack wall trees, especially Cherries and Plums. The points of shoots are a favourite place of infestation. The best way of cleansing them is to dip in some insecticide, and afterwards vigorously syringe the affected parts. Where the insects are less numerous dustings of tobacco powder will destroy them, and much benefit will be derived by the trees if syringed with quassia extract, and frequently with clear water. These applications also help to keep down red spider.

THE BEE-KEEPER.

SPREADING BROOD.

NOTHING must be left to chance if bee-keepers are to derive full benefit from their bees when the honey flow comes. All will depend on the treatment they receive during the next two months whether the various colonies in the apiary will be in a satisfactory condition when that time arrives. There are many devices practised by bee-keepers to assist the bees to increase at a rapid rate. Amongst them is spreading the brood. This operation requires some skill in manipulating the combs and brood, otherwise it will have the contrary effect. The plan usually adopted is to place an empty comb, or a full sheet of foundation, in the centre of the brood nest as soon as the comb is filled with brood. Another empty comb is placed in the same position. This being repeated as often as necessary.

If the weather is warm a strong colony will increase at a rapid rate if the spreading of the brood is not overdone; but should a sudden change in the temperature take place, the bees will be unable to cover all the frames in sufficient numbers to keep the brood warm—that in the outer combs will thus become chilled, and the stock will then be in a more backward condition than if the bees had been left alone. For this reason we do not recommend the spreading of brood, as usually understood, but prefer the safer plan of providing fully drawn out clean combs as often as necessary. Instead of placing them in the centre of the brood nest they are put on the outside, next to the comb that is filled with eggs and brood. The stock is examined about every fourth day, and if the comb next to the outer one is filled with sealed stores it should be uncapped. The bees will thus have plenty of natural stores close to the brood, and will increase at a rapid rate if properly covered. In a few days the opposite side of the brood nest may be operated on in like manner, and the result will be a strong colony of bees when the honey flow comes.

By working on the above lines there will be no danger of chilled brood, as the queen will not lay more eggs than the bees can properly attend to. If the stock is short of sealed stores close the division board and feed with warm syrup, as advised in previous notes.

RENEWING COMBS.

It is necessary to constantly bear in mind the advantage of having a supply of clean combs on hand; and as spring and early summer is the season when the bees will draw out worker cells, preparations should be made so that a stock of comb foundation is on hand when required. Combs will not last for an indefinite period, as they become clogged with pollen and other refuse, and when in that condition should be removed and melted down or destroyed. It is a good plan to examine the stock of comb, whether in the hive or stored away, at least once a year, the spring for preference. The comb remaining will then be always in good condition.

If an undesirable comb is filled with brood it should be marked and removed at the end of the season. We once saw some combs that were filled with healthy brood removed from a frame hive in May and placed in the open air for the bees that were on the wing to clean out the stores. On examination the brood was found to be all dead, as they had been exposed a day or two, and thus a few thousands of valuable bees were destroyed. We need hardly say this was a case of mismanagement. Bees are too valuable to be destroyed in this manner during the spring.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Lavender on Grass (Avis).—The Lavender would succeed on grass like any other low-growing shrub, only give them some good soil to grow in. The cuttings should not be inserted until September or October. Use young wood, place in free sandy soil under hand-lights, and plant out during the following spring. It is desirable to keep the ground round the stem free from grass, at least until the plants become well established.

Muscat Vine Breaking Unevenly (M. K.).—It is difficult to assign a reason for the buds breaking unevenly, but it generally arises from overcropping and consequent indifferent perfecting of the basal or pruning buds. We have found the best recuperative to be in encouraging more growth and not pruning so closely, growing the Vine on the semi-extension system. The Lady Downe's Vine should have the flowers carefully fertilised, taking pollen from the Hamburgs or other free-setting varieties. It would probably colour better by dressing the border with basic slag phosphate, or use a mixture of double sulphate of potash and magnesia, one part to three parts of bone superphosphate, using 4 ozs. of the mixture per square yard, and pointing in very lightly.

Destroying Black Fly in Peach House (Jardinère).—The most effective, but not always the safest, method of curing the Peach fly, *Aphis persicæ*, in a Peach house is fumigation with tobacco paper, or vaporisation with nicotine essence. The danger from the use of either is giving an overdose, when the foliage suffers serious injury, or may even fall. With judicious application and repeating on two or three consecutive evenings the pests are annihilated for the time being. We find it a better plan to go over the trees, and with the fingers dipped in tobacco water wet the affected parts thoroughly by gentle rubbing, and then fumigate the house, taking care to have the foliage dry and not give an overdose. Another good cure is to boil 4 ozs. of quassia chips in a gallon of soft water ten minutes, and dissolve in it, as it cools, 4 ozs. of softsoap. It should be stirred, and the trees syringed with it twice or thrice. The day following they should be syringed with pure water.

Freesias Outdoors (Idem).—We have no personal experience of these as outdoor plants, and hardly think they would succeed in a warm situation, as they flower during the winter, and are therefore likely to be cut off by frosts. We find they require a structure from which frost is excluded for their successful flowering. Freesias are largely and very successfully grown in Guernsey. See note on Freesias out of doors on page 383.

Chrysanthemum Leaves Blackened (F. W.).—The leaves are not, so far as we can discover, affected by rust fungus. The plants, however, are attacked by a worse enemy—namely, the so-called stem eelworm, *Tylenchus devastatrix*, which causes the leaves to become brown, black, clammy, and dead; even the plants sometimes succumb, turning black and dying off at the collar or root. We have used with advantage soluble phenyle, 1 fluid ounce to 6½ gallons of rain water, and dusted the plants with tobacco powder. The pests took their departure, as the tobacco unquestionably dissolved out on the injured and moist leaves, and sunk into the tissue. Another method is to use methylated spirit, spraying on and covering every part of the plant with the finest possible film. Pick off the worst infested leaves and burn them, then dust with either tobacco powder or black sulphur (*sulphur vivum*), and use air-slaked lime with a little kainit in the soil, or water with lime water made in the usual way, and alternate with kainit 1 oz. to a gallon of water, and follow with nitrate of soda quarter ounce to a gallon of water.

Silver Bicolor Pelargonium (C. T.).—The truss of the double flowers is good, and the leaves clear. The variety is worthy of preservation and increase for home decoration, but we should not like to say that either it or any new variety possesses material value without seeing plants. If you raised it from seed you are justified in giving it any name you desire that is not already given to a prior variety of the same type.

Cutting Back One-year-old Seedling Seakale Plants (Somerset).—The plants we presume are running to "seed" or showing flower heads. These should be cut away to the embryo buds, or the flowering stems be removed just below the leaves. The buds will then develop leaves, and by thinning to two or three on a plant, removing the weakest, good crowns will be secured. Of course, on weak plants only one, on moderately vigorous two, and on very strong plants three crowns or buds should be allowed to develop. The earlier the thinning is attended to the stronger the crowns will be. By cutting below the embryo buds some time must elapse for the root stem to form buds, and this throws the ripening back, hence the plants are not so good for early forcing, though they answer well for later use. The buds in this case also must be thinned.

Apple Tree Buds (A. Z.).—The microscope fails to show any insects in the buds, and we repeat, the birds take them as food, not for the insects or animal, but for the vegetable substance. Beyond the advice given last week, page 375, we cannot suggest anything to deter the depredations. We had an orchard and fruit plantation almost surrounded by woods and plantations, and for three years the bullfinches had all the fruit in the bud, but when we used the gun, in spite of gamekeepers and lovers of Nature, plenty of fruit followed. Birds are very delightful, and those who prefer them to fruit will protect them, but if fruit is of the first importance birds must often be either baffled or shot. Even if in your case the birds were destroying the buds for the sake of supposed insects in them, that would not make the case any better from a fruit point of view; but there were no insects in the buds.

A Sluggish Madresfield Court Vine (R. L.).—The growths are, as you say, "stunted," but very prolific, having a fairly promising bunch at the third, and another cluster for fruit at the fifth joint. Both the wood, leaves, and bunches are quite clean and healthy, but appear deficient in vigour. The comparison with Black Hamburgh is hardly doing justice to the Madresfield Court, as the first is one of the freest growing varieties, and the latter not by any means so free in starting into growth, though we have seen it quite vigorous under the same conditions. The root is not what it ought to be, for though the larger parts are healthy, the fibrils are dead, and hence the Vine is not supplied with sufficient sap to sustain the growth. Possibly the border has been kept too wet, or the roots may have come in contact with something unsuitable. The temperature should be 60° to 65° at night when the Vines are in leaf (not "just above 50°"), and 70° to 75° in the daytime (not "60°"), rising to 80° or 90° with sun (not "70° to 80°"). Those are the proper temperatures for free progress, though at night the temperature may fall 5°, and the same on dull days from the figures given. In addition to raising the temperature we should apply a dressing of bone superphosphate, dry and crumbling, three parts; nitrate of potash, crushed fine, two parts, and gypsum, ground, one part; mixed, using 4oz. per square yard, and pointing in lightly without disturbing the roots, or if these are near the surface, cover with a little decayed manure or turfy loam. Active fibres may then be produced by the sound parts. The dressing can be repeated after the Grapes are thinned and about a quarter swelled.

Diseased Cucumber Plants (J. W. T.).—The sturdy stemmed plant has fallen a prey to the smother fungus, *Sclerotinia sclerotiorum*, syn. *S. libertiana*, syn. *Peziza postuma*, which lives or grows on the cuticular cells and immediately underlying tissues. A yellowish discolouration first appears, and afterwards a felt like coat, quite white, and in this the sclerotia are produced in the form of small black bodies, and these carry over the disease from year to year, but the mycelium also may remain dormant, and grow again, similar to Mushroom spawn. To save plants after the attack has become pronounced is very difficult, but you may dress the plants well with freshly burned best chalk lime, ground, not slaked, to a powder, rubbing it on the stem above the soil where the yellowish and white marks appear; also sprinkle freely about the stem at the collar but not more than to make white, as the lime may burn the stem and roots. If the fungus has not "eaten" round the stem the plants will recover to some extent, but usually the lime does not reach the deep seated mycelial hyphæ, and it progresses in the living tissue, ultimately smothering and girdling the whole stem. It is, perhaps, the worst of all diseases that affect the Cucumber and some other plants. In your case it has come from the soil—a very sandy vegetable or peaty mould of a loose nature, and full of the roots of various natural vegetation, chiefly grasses. The fungus was found on one, and in another an eelworm, *Tylenchus devastatrix*. No eelworms were found, however, on the Cucumber plant roots or root-stem. We advise as a preventive the use of lime freely with the soil, and let it be best chalk lime, not magnesian, 2½ parts to 100 parts of the freshly cut turfy soil, and along with it use 1 part of kainit to 100 parts of the soil, which will give 103½ parts—pecks, bushels, barrowloads, or cartloads—and let the mixture be even in the stacking of the turfy soil. It should lie in the heap three months before use, then chop down from top to bottom perpendicularly and mix or turn over at least once, so as to get the top and bottom evenly incorporated. This is the best preventive of root affections with which we are acquainted, and one of the very best for the health of the plants. If the turf must be used relatively fresh, place it a foot deep and sprinkle on half a pound of freshly burned and slaked chalk lime, and 4 ozs. of kainit per square yard. Chop up, turn over well, let lie a few days, turn again, and then use in the course of a few days.

Red Spider on Violets in Frames (Worcester).—The best remedy is plenty of water at the roots and a moist genial atmosphere. Drought is the element in which the pest thrives. Syringe the plants with clear soot water made by placing a half peck in a bag and this in a tub with 30 gallons of water, stirring well once or twice daily for a week, then use the clear liquid only for syringing the plants. The Violet plants should be grown outdoors in the summer, and with proper attention in mulching and watering, they will not be affected with red spider when lifted and placed in the frames.

Tulips Diseased (Tulip).—The bulb partially decayed is affected by the Tulip mould fungus (*Penicillium glaucum*), which, though generally a saprophyte, sometimes develops a parasitic mode of life. It most commonly affects the Tulips that have been grown in the same place for a number of years. We have found that careful removal of all the old bulbs, on which it develops most rapidly, and whence it spreads to newly planted, even imported bulbs, very important. Of course a change of soil is desirable, but not often feasible, hence dress with quicklime, $\frac{1}{2}$ cwt. per rod, and apply during a dry time some few weeks in advance of planting, pointing-in lightly. It helps to destroy dead bulb scales and to kill the fungus. But give the land also a dressing of fertiliser, such as three parts of bone superphosphate and two parts of double sulphate of potash and magnesia mixed, using 4 ozs. per square yard. The other bulbs are "touched" with *Botrytis galanthina* and the *Penicillium*, and will develop more or less when they are placed in moist soil. Dress the bulbs with quicklime, or even Bordeaux mixture, before planting; but the thing is to disinfect the land and remove all diseased bulbs.

Pear Growths Diseased (J. S.).—Yes, the young growths are infested by two, and even three diseases. One is the Pear-leaf mite, *Phytoptus pyri*, which produces the disease known as the Pear-leaf blister, the spots being reddish, sometimes quite crimson, and in other parts of the leaf whitish green. In bad cases the leaves turn black, and then brown, dying; and sometimes the wood is affected. The damage is caused by the mites biting the tender tissues and depositing eggs in them, which soon hatch into minute whitish creatures that give rise to the blisters. The second parasite is the Pear-leaf blight fungus, *Entomosporium maculatum*, which gives rise to dull reddish spots on the upper surface of the leaf, and later on the under side, and finally the leaf, or part, becomes brown and dead. Very young leaves curl, and the young shoots die at the points in consequence of the attack. The third disease is the Pear blight, or "fire blight," which attacks the young shoots, leaves, and even blossoms. It is a *Schizomycetes*, or bacterial body, named *Micrococcus amylovorus*. Spraying with petroleum emulsion—the soluble petroleum insecticide advertised—acts effectively if applied in time. It may be used as a check in summer, directing the spray against the under side of the leaves, and thoroughly in the winter. In pruning remove the affected parts, cutting to sound wood below, and burn them. After this is done, and the petroleum emulsion is used early and occasionally, the insidious foes make little or no headway.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. L.).—1, *Anemone appennina*; 2, despite excellent packing the flowers had fallen on arrival, perhaps you could send some more in the early bud stage; 3, *Pteris cretica* var.; 4, *Begonia Meyselliana*; 5, *Calathea (Maranta) zebrina*; 6, *Cyperus alternifolius*. (Z. D. R.).—1, *Dendrobium densiflorum*; 2, *D. thyrsiflorum*; 3, *Oncidium flexuosum*. (J. McC.).—1, *Anthericum variegatum*; 2, *Agapanthus umbellatus variegatus*; 3, probably a *Hymenocallis*, but flowers are necessary for positive identification; 4, *Kerria japonica* fl.-pl. (A. E. D., *Cannell*).—*Cryptomeria japonica*. (A. L. S.).—A varietal form of *Clivia (Imantophyllum) miniata*. (P. J. P.).—The *Cypripedium* is a small flower of *barbatum*. The Zonal *Pelargonium* is very fine, but we cannot give its varietal name. Send it to Pearsons of Chilwell or Cannells of Swanley, with a stamped envelope for a reply, and they will assist you. (H. O. E.).—1, a form of *Selaginella Martensi*; 2, *Davallia immersa*; 3, undeveloped frond, possibly *Lastrea patens*; 4, *Cyrtomium falcatum*; 5, *Pellaea hastata*; 6, *Selaginella uncinata*. (A. W. J.).—*Lycaste (Maxillaria) Harrisonæ*.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn.

COVENT GARDEN MARKET.—MAY 10TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Grapes, lb. ...	1	6	St. Michael's Pines, each	2	6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0	Onions, bushel ...	3	6
Beet, Red, doz. ...	1	0	Parsley, doz. bnchs. ...	2	0
Carrots, bunch ...	0	3	Parsnips, doz. ...	1	0
Cauliflowers, doz. ...	2	0	Potatoes, cwt. ...	2	0
Celery, bundle ...	1	0	Salsafy, bundle ...	1	0
Coleworts, doz. bnchs. ...	2	0	Scorzonera, bundle ...	1	6
Cucumbers ...	0	4	Seakale, basket ...	1	6
Endive, doz. ...	1	3	Shallots, lb. ...	0	3
Herbs, bunch ...	0	3	Spinach, pad ...	0	0
Leeks, bunch ...	0	2	Sprouts, $\frac{1}{2}$ sieve ...	1	6
Lettuce, doz. ...	1	3	Tomatoes, lb. ...	0	4
Mushrooms, lb. ...	0	6	Turnips, bunch ...	0	3

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2	0 to 3	Lily of the Valley, 12 sprays	0	4 to 0
Asparagus, Fern, bunch ...	2	0	Marguerites, doz. bnchs.	4	0
Azalea, white, doz. bnchs.	3	0	Maidenhair Fern, doz.	6	0
Camellias, per doz. ...	1	0	bnchs. ...	6	0
Carnations, 12 blooms ...	1	6	Narcissus, doz. bnchs. ...	1	0
Daffodils, single yellow, bch. 12 blooms ...	0	6	Orchids, var., doz. blooms	1	6
Daffodils, double, bunches	0	4	Pelargoniums, doz. bnchs.	4	0
Eucharis, doz. ...	2	0	Roses (indoor), doz. ...	2	0
Freesia, doz. bnchs. ...	2	0	„ Red, doz. ...	2	0
Gardenias, doz. ...	1	0	„ Tea, white, doz. ...	2	0
Geranium, scarlet, doz. bnchs. ...	4	0	„ Yellow, doz. (Perles)	2	0
Hyacinths, Roman, bunch	0	4	„ Safrano, doz. ...	2	0
Lilium Harrisii, 12 blooms	3	0	Smilax, bunch ...	2	0
„ longiflorum, 12 blooms	4	0	Tulips, bunch ...	0	4
Lilac, bunch ...	3	0	Violets, doz. bunches ...	0	6
			„ Parme, bunch ...	2	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ficus elastica, each ...	1	0
Aspidistra, doz. ...	18	0	Foliage plants, var., each	1	0
Aspidistra, specimen ...	5	0	Lilium Harrisii, doz. ...	24	0
Crotons, doz. ...	18	0	Lycopodiums, doz. ...	3	0
Dracæna, var., doz. ...	12	0	Marguerite Daisy, doz. ...	6	0
Dracæna viridis, doz. ...	9	0	Myrtles, doz. ...	6	0
Erica various, doz. ...	9	0	Palms, in var., each ...	1	0
Euonymus, var., doz. ...	6	0	„ specimens ...	21	0
Evergreens, var., doz. ...	4	0	Pelargoniums, scarlet, doz.	8	0
Ferns, var., doz. ...	4	0	Solanums, doz. ...	6	0
„ small, 100 ...	4	0			



TWO FEATHERED FRIENDS.

IGNORANCE is always to be deplored. The ignorant are shut off from so much pleasure and culture (rather we should put culture first). Of course the caviller will argue that what a man does not know of he never craves for. True; but there are at times, in the most ignorant soul, vague longings and yearnings after better things. It is curious we should be so blind to the many workings of Nature on every side. If we knew a little more of her methods, we could help rather than hinder her useful and valuable processes.

It is astonishing, for instance, how few of us, whose lives have been passed in the country, have taken up or studied, in its varied aspects, bird life. Our bird life is so abundant and varied. This temperate clime is so favourable to incubation—our varieties of soil afford every kind of food—the face of the country is so varied, that there are suitable haunts for all manner of birds. We are rich in the home product, so to speak; we are rich in the migratory species, and once in a century arises a man like Gilbert White or Charles Warterton. We do not expect every countryman to be a born naturalist, but we might reasonably have expected to find a little more general knowledge relating to the habits of our feathered friends. We take focus for

friends; we underrate the foe, we undervalue the friend. We are like gamekeepers—hostile to everything save our own particular charge. Even the pugnacious thieving sparrow has its adherents, and the maurading crow; both have done good work, both are capable of great mischief. Both have been allowed to overstep reasonable limits. They were accorded a little grace, they have now become our masters.

Of the two birds of which we would speak, one is most graceful in form, most elegant in motion, and possessing rich glossy plumage. *Hirundo rustica*, or swallow, comes to us about the middle of April, and takes its leave the latter end of September or early in October. In fact the duration of its stay depends upon the duration of insect life. Sometimes, poor birds, for the first few weeks their meals must be scanty. It is not the swallow that makes the summer, and if cold winds prevail and frosty nights follow insect life is checked, and insectivorous birds have but a sad time of it. We remember one very cold spring finding many dead swallows. We do not think it was the cold that had killed them, but, from their attenuation, lack of food.

They wage war on flies of every kind, many gnats, small moths, and beetles on the wing. They may be seen, too, picking up such insects as are found on the ground. As their food is entirely insect life, it would be a nice calculation to arrive at the number of deaths they are guilty of during a long summer's day.

When large gnats, such as "daddy longlegs" and crane flies merge from the pupal state, towards the end of summer, and in their heavy flight pass over fields and lawns, the swallow is there awaiting them. Perhaps, however, it is the Hop planter who owes them the greatest debt of gratitude. His is a precarious calling; the poor Hop plants are liable to attacks from so many enemies, and from one of these enemies the swallow does much to free the Hop bine.

It is a curious fact, and one worthy of note, that since the swallow has been on the decrease during the last fifteen years, the Hop flies or aphides of *Phorodon Humuli* have terribly increased. This blight, the result of the fly attack, is now almost annual instead of occurring as it used to do once in every three or four years. When the aphides leave the Hop gardens for their winter quarters on Plum and Damson trees, the swallow is in wait for them, and does make havoc in their ranks; but where are the swallows? Whose fault is it that they are not here?

The swallow is not a bird that our boys torment, they, or the most of them, treat this foreign visitor with fair courtesy, but it is the wretched little quarrelsome sparrow, *Passer domesticus*, which has driven away the swallow. He is always with us, winter and summer, and being on the spot, seizes and holds by main force the best nesting places, and keeps them against all comers. This is one of the outcomes of the sentimental cry, "Oh! spare the sparrow; he is the farmer's friend." He is all very well in the proper place, but he now has got beyond all bounds, not only doing vast harm himself, but driving away those birds which are of the greatest value.

Then, again, the swallow's wing is of beautiful shape, the colour fine, and Fashion says, "Trim with wings; all sorts, every kind;" and the death warrant of the swallow is sealed. What can we say? Shame covers us as with a garment, and we blush for our sisters, who are sinning so ignorantly.

The second bird which is such a friend to the husbandman is also a summer visitor, the spotted fly-catcher, *Muscicapa grisola*. It is hardly here as soon as the swallow, and does not come in such large numbers, and possibly is not so well known.

For years several pairs have nested in our garden, and we notice their arrival directly, not so much from their colour, as for their quick, sharp flights; hawking flights, one might say; nothing but insects—moths, flies, beetles and aphides. A pair were watched one day, and they brought food to the nest 537 times, and as they would bring as many as four and five flies at a time, they prove pretty clearly they have a mission which they fulfil. Proof is wanting that this bird is injurious to fruit; no remains have ever been found in the

stomach. True, they are among the fruit, for it is there they have their happy hunting grounds.

They, too, are of immense value to the Hop-grower, and do their share in destroying the dreaded flies. The saw-fly, the pest of Gooseberry growers, is also a favourite diet with them; their quick eye and quicker bill will do work that no human hand would undertake.

Why this valuable bird, with the swallow, should not be strictly preserved, we fail to see. We do not know our friends, or, if we do, we but tardily acknowledge their services. We find that abroad, in a certain measure, the swallow has a "close time." We might do worse than follow the foreigner's good example.

WORK ON THE HOME FARM.

The district reports in the agricultural papers have been lately amusing, as well as interesting. There is always a great diversity of opinion amongst them, which is natural, when the very widely differing conditions of soil and climate are considered; but we do not often see such flat contradictions as we have just now. One man thinks the weather and everything else perfect; another, only twenty miles away, has got little or no work done for a month, and writes in very low spirits. There must be difference of temperament here, as well as of soil and climate.

Much more rain has fallen, and some farmers have no doubt found much difficulty in finishing their spring corn sowing, and this only shows again the wisdom of getting on whilst the sun shines and the land is in good condition. Some farmers make rules not to drill before a certain date, but it is better to take advantage of favourable opportunities, even if they occur before the conventional time.

The same thing may be said as regards the Turnip crop, but the conditions must be good. Warmth is the important factor in growing young Turnips, and if May be cold and wet wait until June. We like to see a little reek of dust behind the drill, and if the sun be shining hotly, and the ground feel warm to the hand, keep the drill hard at work until all is finished.

Cabbages may still be planted, as the weather is more favourable than it generally is in May for young plants making a start. Mangold has not been easy to get in well, but with such abundance of moisture there should be an excellent plant, and all that is wanted is warmth and sunshine.

Spring tares sown now will be very useful in harvest. If not wanted for the horses, they will come in for the cows or lambs. The latter have generally been a good crop, and there has been less than the usual mortality amongst the ewes. Lambs are doing well, though pastures still are not great. Ewes must soon be clipped, and may be washed any time, the clipping taking place as soon afterwards as the weather is warm enough. We think the risk of losing ewes from too early clipping less than that of finding them dead after being overturned a few hours. They require very close and frequent shepherding just before clip-day.

Cattle are doing well out. There is not much grass, but apparently sufficient. Sunshine and a warmer wind are wanted.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899. April. and May.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	30	30.094	46.1	40.4	N.	49.2	54.3	41.8	106.4	40.0	
Monday	1	30.205	50.2	44.8	S.	48.9	58.3	41.1	95.2	34.1	
Tuesday	2	29.884	56.6	50.9	N.	48.9	64.4	46.7	107.8	42.2	
Wednesday	3	30.028	46.7	44.1	N.E.	50.0	57.4	44.8	107.1	43.9	
Thursday	4	30.255	47.6	42.0	N.	49.0	57.2	34.6	104.8	29.9	
Friday	5	30.422	49.3	41.7	N.E.	48.1	58.6	34.4	108.4	29.2	
Saturday	6	30.433	51.1	44.9	N.E.	48.8	62.2	34.7	111.4	30.8	
		30.189	49.7	44.1		49.0	58.9	39.7	105.9	35.7	

REMARKS.

30th.—Frequent heavy cloud, but much bright sun.

1st.—Overcast all day.

2nd.—Alternate cloud and sunshine during day; overcast evening.

3rd.—Overcast and spots of rain early; alternate sun and cloud from 10.45; bright afternoon.

4th.—Brilliant and cool early; cloudy at intervals during day.

5th.—Brilliant early, and bright day, with cool N.E. wind, but hazy or cloudy occasionally.

6th.—Brilliant day, with cool N.E. breeze.

A fine week, average temperature, and a few slight frosts on grass.—
—G. J. SYMONS.

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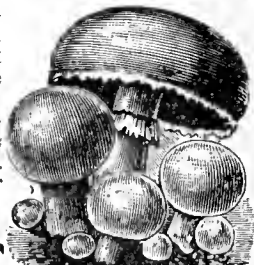
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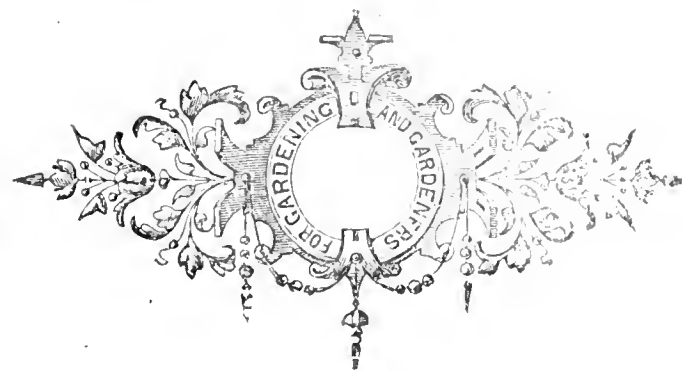
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Journal of Horticulture.

THURSDAY, MAY 18, 1899.

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FEEDING VINES.

NOW that the practice of cropping Vines much heavier than formerly has become general, the vital question of feeding demands special attention. It is quite possible to preserve Vines which are heavily cropped annually in perfect health and vigour for years, but to do so no half-measures in regard to feeding will bring about the desired results. The matter should be considered from a manufacturer's point of view, the nourishment in the soil being the raw material, which the Vine, by the aid of heat, air, and sunshine, converts into Grapes.

Fortunately we get the air and sunshine, and a certain amount of heat for nothing, but the solid substances necessary must be obtained from the soil; and although they form only a small proportion of the food required, it is, nevertheless, an undoubted fact that a large bulk of material in the shape of natural or chemical manures must be constantly applied to maintain the fertility of the soil. What a productive land Britain would be if all the cultivated soil produced as bountiful a crop as a well managed Vine border of ordinary dimensions does! I am inclined to think that a Vine growing in a cubic yard of soil will produce a heavier weight of fruit than any other tree. With good culture fine crops may be secured annually with as much certainty as a crop of Cabbages. Other fruits will sometimes play us false when given the best of attention, but the Vine is the gardener's steadfast friend.

Let us now deal with the practical part of the subject as to the best course to follow in feeding Vines. There can be no doubt that many cultivators have been in the habit of relying solely on manures, which, although good in their way, contain too large a proportion of nitrogen to form a perfect Vine food; but thanks to much valuable information on the chemistry of manures, which has recently received much attention, Grape growers are recognising the importance of applying additional phosphates in cases where animal manures are largely used.

The practice I find successful in keeping Vines in a vigorous condition, notwithstanding the heavy crops they carry, is the following. At the winter dressing we remove a little of the surface soil—and it is often only a very little, because of the network of roots; a surfacing of bone meal or Thomson's phosphate powder is then applied at the rate of 2 ozs. to the square yard. Over this is placed an inch layer of fresh loam, this in turn being covered with a layer of blood and slaughter-house refuse. A thorough watering is then given, and the surface is just covered with fresh loam. These materials form a substantial and varied fare, and perhaps some cultivators will think that so many layers would bury the roots too deeply. In reality, however, the depth of the combined layers is not more than 3 or 4 inches, and during the summer I find roots come to the surface and work freely through the mass.

During the early stages of the Vine's growth, plants such as Spiræas and Ferns are grown under the Vines. These are cleared out by the time the Grapes require thinning; the border then receives a "dusting" of lime, is slightly stirred upon the surface, and soon becomes sweet and permeated with active roots. When the thinning is completed a layer of well decayed town manure is given, and the border copiously watered. By closing the houses early with plenty of moisture at this stage the berries seem to swell as if under the influence of a magician's hand, but the only magic about the matter is the work of the glorious heat of the sun, and the plentiful supply of plant food brought within the reach of healthy Vine roots.

It seems to me that one of the greatest problems to be solved during the twentieth century is the gigantic one of how we can best turn to account the vast amount of sewage and refuse of our towns, which at the present time is wasted instead of being used to "replenish the earth." Let me, however, hasten to add that I am fully aware that nothing in the world is really wasted, it simply changes its form, and much of the sewage which now pollutes our rivers in time finds its way to the sea bottom, where, after future upheavals of the earth's crust, it may form rich alluvial soil upon which crops will flourish in the ages yet to come. Such refuse, then, is only "wasted" as far as the present age is concerned.

But I have wandered from the comparatively prosaic details of gardening of to-day into visions of the future; let us return to the Vines. After feeding to the extent already indicated some persons would be inclined to rest satisfied, but when there are heavy crops I feed with liquid manure up to the time the Grapes are fully coloured, then clear water only is given till the bunches are cut. With early and midseason houses I often apply liquid manure after the fruit is cut, unless the wood appears to be unduly strong, but such is seldom the case, it is more generally noted for its hard wiry appearance. It is only when natural manures alone are used that we get strong soft wood—or, perhaps I should write, "only when manures which contain too much nitrogen are exclusively used." In the case of Vines grown for the production of late Grapes, I discontinue feeding after the berries begin to show colour, unless at that time the weather happen to be exceptionally bright, as it is always an important matter to get the wood thoroughly ripe, or the Vines will fail to be satisfactory the following year.—H. DUNKIN.

BRITISH VINEYARDS.

MR. G. ABBEY'S letter in the *Journal of Horticulture*, 20th April (page 324), is in my opinion highly interesting. The list of English vineyards there given could easily be extended; Walham Green, Rotherhithe, Abingdon, and Lawrence Cottage, Isle of Wight, occur to me. The latter, along with Pain's Hill, Surrey, were still making wine in the present century.

The Swanbridge vineyard belongs to the Marquis of Bute, and so also the St. Quintin (I think that was the name), but this third one was abandoned on account of its exposure to rough winds from the Bristol Channel. I do not like to say anything unkind of the principality, but let those who know it best say if I am right or wrong in pointing out that it has more cloud, rain, and damp air from

the Gulf stream than Gloucestershire, the south Midlands, and the south and south-eastern counties.

Notwithstanding this, I do not see why cuttings from the Castle Coch vineyards should not furnish a hundred or two little plantations, on suitable soils on hillsides facing south to east. The idea of south in the compound south-west is misleading, this aspect getting the worst of the weather, and east is better than south-west unless this last has unusual and efficient shelter without shadow. I imagine the Gamay Noir Grape of Castle Coch is the most suitable, being the poor man's Grape of Burgundy, and would yield an encouraging quantity of wine to small Welsh growers.

Referring to Mr. G. Abbey's second letter in your issue of 27th April, page 336, I must repeat what I have said elsewhere, that the Duke of Norfolk's wine was fairly described as "excellent Burgundy," but that Lord Bute's wine at Castle Coch and elsewhere is by no means a model of what this country could produce, because, as aforesaid, the climate of Glamorganshire is too humid, and because red wine there has been the exception from the Gamay Noir Grape, in consequence of the want of a proper wine house in which to make the wine at a proper temperature.

We now want model experimental vineyards in the southern and south-eastern counties, in situations that are chosen for their position as regards drainage and exposure to the sun, without being swept by rough wind, rather than rich or valuable land. I suggest that landed proprietors should offer such sites, or express themselves as willing to further the matter. It must be remembered that if anything is done in this way, it has to compete with a very different state of matters across the channel. What we know as peasant proprietorship accounts for a great deal of the wine growing in France. Fortunately for the argument, Vine land is naturally cheap land, and whoever is willing to help the resuscitation of British vineyards should consider this.

The three red Grapes mentioned by your correspondent—namely, the Black Cluster, Miller's Burgundy, and Gamay Noir, are three of the best for making wines similar to claret and Burgundy. Sir Joseph Banks found the Miller's Burgundy Vine growing wild in an ancient vineyard in Gloucestershire. It is a reliable red wine Grape. The Royal Muscadine made pleasant light white wine in the Isle of Wight in the early part of the century. The Vines were planted too near each other, but whether this was a cause of the produce failing, and so helping the abandonment of the venture, I do not know.

Open air Vines should not fruit before their fifth year. They ought to be so treated as to justify Clement Hoare's assertion that their crop can always increase, and the Vine be the only fruit tree which in South Britain never loses its crop by frost. Lately I had to estimate for some friends what the return would be commencing the fifth year, and remembering that the fifth year might possibly be such as 1879 was, I replied only half a pound per Vine, though convinced, as I explained to them, that it would be 1½ lb. The crop permitted on Vines should always have respect to what the Vine should do the following year. It would take an old, well kept English vineyard to produce 6 lbs. per Vine. It is not impossible, but the approach to such a crop must be very gradual. I have seen vintages in Champagne and other districts where the weight per Vine was not over 2 lbs.; while in years like 1875 and 1893 the Vines ran from 6 to 10 lbs., and often more. The best years in France are our best years. I have occasionally had 6 lbs. on standard Vines.—H. M. TOD, 239, Goldhawk Road, W.

DOUBLE DAISIES FROM SEED.

IN answer to an inquiry for the method of raising these attractive flowers in the Royal Gardens, Windsor, referred to last week, we have been favoured with the following notes.

The Daisy seed is sown about the end of April, usually in shallow boxes out of doors in a shady position, and when large enough to handle, the seedlings are pricked into ordinary garden soil in our reserve garden in beds 5 feet wide (this width being a convenient one for hoeing and cleaning) in row 10 inches asunder, and the plants inserted 5 inches apart in the rows. Under this treatment by the end of the summer they make good strong plants, fit to plant out in the flower garden at the end of September or any time in October.

The Welsh name for this bright and cheerful "wee" gem of a plant is more appropriate and expressive, I think, than the English one, although at some time or other, I should imagine, the latter has been taken from the former, but, unlike the Welsh name, still retained. The English term has slightly lost its force in the name Daisy. In Welsh, the Daisy is called "Llygaid y dydd," which interpreted, means the "Eye of Day," or Day's Eye, now corrupted into Daisy. Why not revert again to the old name? It is much prettier, and expresses more truthfully one of the most charming attributes of these most cheerful plants, inasmuch, that the sun scarcely ever rises but is welcomed by the eye of one of its pretty open blooms.—O. THOMAS.

[In the notes on Windsor, on page 378, last week, the Mount Atlas Cedar was inadvertently printed "Cupressus" instead of *Cedrus atlantica glauca*.]



CYPRIPEDIUM POLLETTIANUM.

HYBRID Cypripediums, in their numbers, are fast approaching the time when one will have to use considerable discretion before recommending any particular variety; but *C. Pollettianum* (fig. 88) I can recommend to every lover of these beautiful plants. It is a compound hybrid raised from *C. calophyllum*, fertilised with the pollen of *C. oenanthum superbum*, and ranks in beauty with *C. triumphans*, *C. Euryades*, *C. Milo*, and *C. Adrastus*. It does not seem to be so well known as it ought to be, and many visitors express the greatest admiration on seeing it for the first time. A large plant with us is seldom without a flower. It is a good grower, in an ordinary warm Cypripedium house, potted in the mixture that has often been recommended for Cypripediums. The leaves show slight reticulations, and reach the length of 12 to 15 inches. The dorsal sepal is of a yellowish green colour, broadly margined with white, veined on the sides and middle with brownish crimson, and densely spotted with chocolate. The sepals and petals are greenish brown at the base, deepening at the extremities to a light purple brown, marbled with darker spots. It is a flower of good size, and altogether a most beautiful Cypripedium.

RENANTHERA IMSCHOOTIANA.

This is a remarkable plant, which produces flowers of an uncommon colour—namely, a deep reddish vermilion; and a plant which flowered freely last season is again vigorously pushing up its spikes. It is of small growth, and produces a spike some 18 inches long, well clothed with flowers. I find it thrives well in a small basket suspended quite close to the glass in a warm *Cattleya* house, and it should be grown in nothing but clean live sphagnum moss, well watered when in active growth, and only enough given it in the winter months to prevent shrivelling. It is a native of Cochin China, and on account of its colour deserves more attention.

MASDEVALLIA EPHIPIUM.

There appears to be a considerable amount of doubt as to when this interesting Orchid was introduced, and it seems to have had several names given it by the various collectors who were fortunate enough to find it. It is frequently called the Humming Bird Orchid, but not being an ornithologist I cannot see much resemblance to a bird. Be that as it may, it is a plant worth a place where the less showy and more curious Orchids find a home. This species is one of the largest of the genus, as the leaves sometimes reach the height of 8 or 9 inches, and its scape 12 or more high. The flowers are often 4 inches long, of a yellowish-brown tinged with red, with three reflexed yellow tails. *M. ephippium* succeeds well with the other *Masdevallias* of the *Harryana* type, but the old spikes should never be cut off, as they produce flowers again like *M. tovarensis*.

CATTLEYA MOSSIÆ REINECKIANA.

Though not, strictly speaking, an albino, this plant is much sought after by *Cattleya* lovers, and many growers consider it more beautiful than a true albino, on account of its highly coloured lip, which, with the deep yellow throat, forms a contrast with the snowy whiteness of the sepals and petals that is superb. There is much variation in the plants grown under this name, many of them having creamy white sepals and petals; but these are not to be compared with the white ones for beauty. *C. M. Reineckiana* thrives under the same conditions as the typical *Mossiæ*, but its flowers should not be allowed to stop on the plants too long, as this favours the weakening of succeeding growth, and I have seen plants nearly ruined from this alone. The plants are now pushing their flower spikes, and soon will unveil their beautiful flowers.

MASDEVALLIA MUSCOSA.

After looking at a large bank of the showier Orchids in flower, one turns with greater interest to those botanical curiosities, of which the above is perhaps one of the most interesting. It has been aptly called the Sensitive Orchid, as the least touch on the labellum causes it to close instantly. The plant is readily cultivated in small pans suspended quite close to the glass, potted in equal portions of prepared peat and moss, and placed in the cool house. The flowers, about three-quarters of an inch in diameter, are borne on slender scapes 5 or

6 inches high, and the leaves are 2 inches long. As in *M. tovarensis*, the flowers are produced from the old spike.

LÆLIA LATONA.

This most beautiful hybrid is again in flower, and it is astonishing what influence *L. einnabarina* has brought to bear upon its other parent *L. purpurata*, as it is almost exactly intermediate between the two. It is astonishing how the yellow from these small *Lælias* infuses into their offspring such lovely colours, of which we have several examples, such as *hippolyta*, *Maroni*, and others. *L. latona* was raised by Messrs. J. Veitch & Sons, and received a first-class certificate when exhibited on May 3rd, 1892. It will succeed under similar treatment to its parents, and is a most pleasing and delightful Orchid.

ONCIDIUM MACRANTHUM AND ALLIES.

These form a magnificent section of this large family of plants which will succeed in the cool house the whole year round. They produce their flowers on long twining, often branching spikes, the individual flowers on most of them being of large size. They should be grown in pots in a mixture of equal parts of rough peat and sphagnum moss, and the drainage must be perfect, as they require

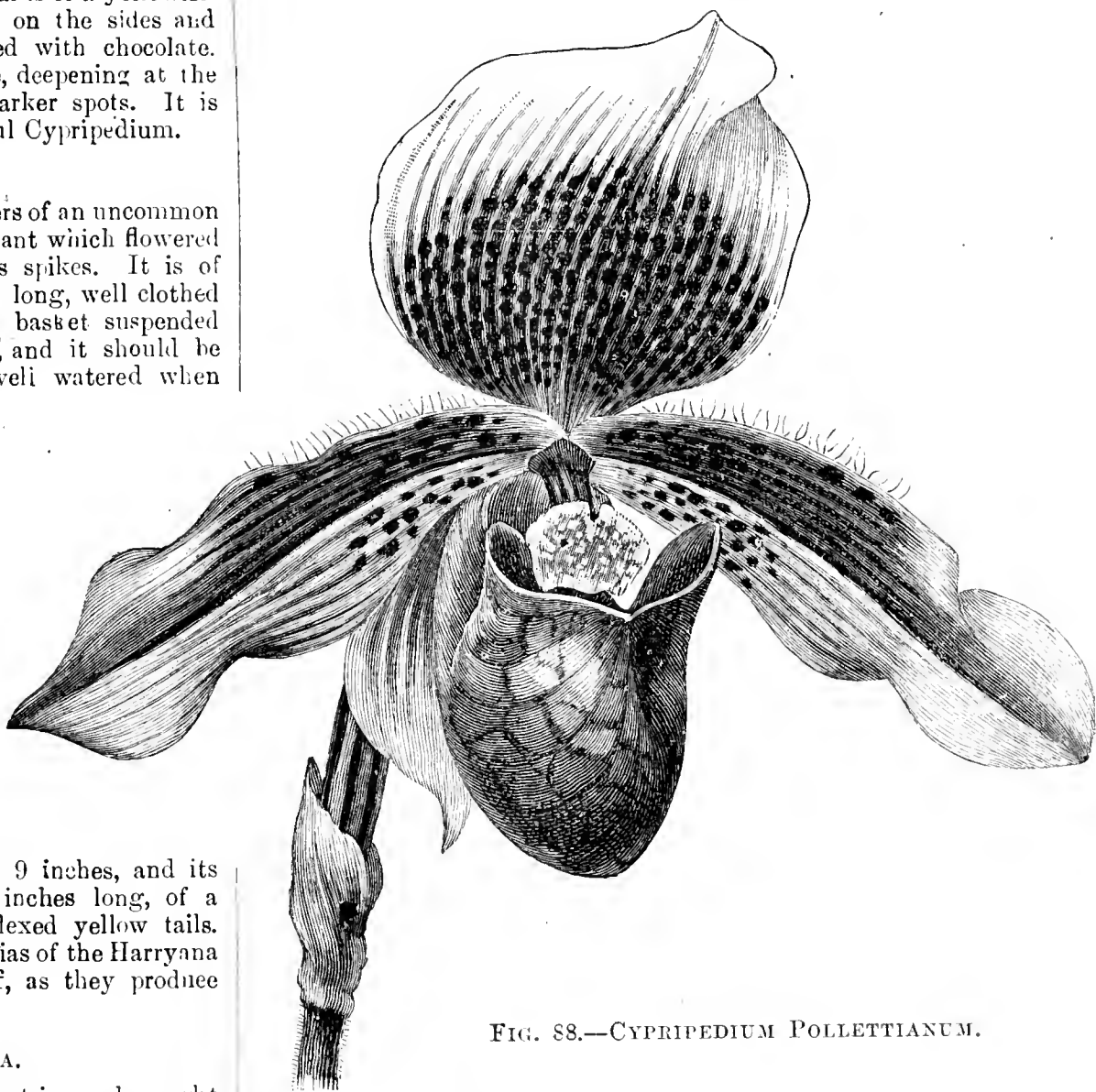


FIG. 88.—CYPRIPEDIUM POLLETTIANUM.

large quantities of water when in active growth, but when at rest much less will suffice, though they must never be allowed to get dust dry. I will commence with *O. macranthum*, which is, in my opinion, the finest *Oncidium* yet introduced. It produces flowers from 3 to 4 inches across, with golden brown sepals and clear bright yellow petals; in fact it is too well known to call for any description. Many growers consider it short lived, but this is entirely due, I believe, to allowing their spikes to stay on the plants too long, as this greatly weakens them. It must be borne in mind that a spike several feet long needs much support, and when all the flowers are open I consider the spike should be removed. *O. chrysodipterum* is very rare, distinct, and handsome. The upper sepal is of a beautiful bright chestnut brown, with a narrow band of yellow. The two lateral sepals are wholly brown, while the much smaller petals are a bright gamboge yellow spotted with brown, and the lip nearly the same colour.

O. falcipetalum is not so showy as some of the others. It often produces a spike 20 feet long with flowers 3 inches across, the sepals of which are brown with a yellow border, the petals yellow, spotted with brown on the lower halves. It is a distinct plant that is seldom seen. A peculiar form is *O. lamelligerum*, and, like the others, bears flowers of different shades of brown and yellow, and when in bloom

the plant is very striking. *O. loxense*, perhaps the rarest of the whole section, has flowers quite 3 inches across, the sepals of which are a pretty greenish yellow, occasionally barred or blotched with brown. The petals are deep chocolate brown with a narrow yellow margin, and the large lip is rich orange with a few red spots at the base. It is a most beautiful plant when in bloom. *O. monachicum* resembles *O. lamelligerum*, and produces its flowers in the early spring months. They are a peculiar cinnamon colour, blotched and edged with pale yellow. As the name implies the flowers of *O. serratum* are crisped. In colour they are a beautiful brown, margined more or less with yellow; it is in flower at the present time.

The flowers of *O. superbiens* are not quite so large as some of the others, but it should be grown where room can be afforded. Like those previously named it produces flowers of various shades of chocolate brown tipped with yellow, some having white on different parts. *O. undulatum* is often confused with *O. superbiens*. I believe, however, that the true *undulatum* should be barred with purplish mauve on the petals, which gives the flowers an altogether unique and peculiar appearance.—J. BARKER, *Hessle*.

MILTONIA FLAVESCENS.

A couple of flowers of this species come from a correspondent for a name. It is a very interesting Orchid botanically, as it forms a kind of connecting link between the well known genera *Miltonia* and *Brassia*. The elongated linear segments are like those of most *Brassias*; they are a pale straw yellow in colour, the lip varying in different forms from yellow to white, with a few lines of reddish purple at the base. Though not altogether a showy plant its distinctness and pretty delicate colouring should insure it a place in collections. It is a native of Minas Geraes, where it was found early in the present century, but it was not introduced to British gardens until some years later.

PINE APPLES.

THE Pine Apple is a tropical plant, and its fruit, *Ananas sativus* or *Bromelia Ananas*, is so called from its resemblance to the cone of the Pine tree. It is one of the noblest and richest of fruits. The essential points to be kept in view in growing Pines are the potting, feeding, and atmosphere. If grown in pots or planted in pits the aim of the cultivator must be to obtain a mass of fibrous roots, without which well developed fruits cannot be expected, and to obtain such roots I have found no compost to surpass good turfy loam, with a liberal addition of fresh horse manure mixed three months prior to potting.

In preparing the suckers remove a few of the lower leaves, and with a sharp knife cut off about 1 inch from the base, inserting these in clean 5-inch pots containing loam and a fair quantity of silver sand, which should be made slightly warm by placing it on the boiler before use. Make the soil moderately firm, and, as I should have said before, crock thoroughly, as carelessness in this detail will probably spell failure. The pots must be plunged in a bed of prepared leaves and manure or tan, keeping the pots level, and about a foot apart each way, and give no water at the roots for about three weeks. Maintain the bottom heat at 80°, with an atmospheric temperature of from 70° to 90° according to the season of the year. Syringe amongst the plants every afternoon, but be most careful to keep water from their hearts, shading from bright sun, and keeping a brisk moist atmosphere.

The plants in six months will be ready for 8-inch pots, which they will occupy for a similar period under the same treatment. They are then placed into the fruiting pots, these being 12 inches in diameter, except for Providence, which requires a 14-inch pot. The compost for fruiting plants must be loam as already advised, with sharp sand, a sprinkling of crushed bones, and a 5-inch potful of soot to each barrowful.

In potting plants at this stage it is of the greatest importance to warm the soil before using it, and to use abundance of drainage, with turfy pieces above it. Pot very firmly, and see that the ball rests well down in the pot, to allow of the fresh compost being well rammed round the neck or collar of the plant to steady it. Replunge the pots at a distance of 2 feet each way, keeping the heat, both at the roots and in the atmosphere, at about 70° in the winter and 90° in the summer. Syringe every afternoon, but allow no water to reach the centres of the plants, as this results in deformed fruits, as does syringing when the plants are in flower. Immediately the fruits can be seen, feeding must commence, and it may be increased with the swelling of the fruit. During the flowering period care must be taken to prevent the slightest check, as this will result in malformation of the fruit. As soon as colouring commences withhold water from the roots, as the atmospheric moisture will suffice. The best varieties for summer use are The Queen, Ripley Queen, and C. Rothschild; for winter, Black Prince, Providence, Smooth Cayenne, and Black Jamaica. The Queen takes the palm for flavour.

For some reason that I fail to see Pines have of late years fallen

into disrepute in many establishments. Surely it cannot be on the score of expense. They require practically the same equipments as stove plants, and I am perfectly satisfied that the flavour of our English grown fruit will never be equalled by those that are imported.—H. MITCHELL, *Druidstone*.



INCURVED *versus* JAPANESE REFLEXED CHRYSANTHEMUMS.

I NOTE the Kingston Chrysanthemum Society has arranged classes in the schedule for incurved Japanese and reflexed Japanese varieties. I have seen in many parts of the country similar classes, but never a single competition that could be termed meritorious. Years ago the N.C.S. had similar classes, but they were dropped after an extended trial, as they produced little effect but plenty of wrangling. The difficulty is to define what varieties are eligible for inclusion. For example, Phœbus and Edwin Molyneux may at certain stages be classed in both sections. Generally speaking, Phœbus is regarded as a typical reflexed Japanese, but under some conditions of culture, and at various stages of development, it partakes of the incurved section. To see this and E. Molyneux staged in both classes would appear somewhat strange to an average on-looker.—E. MOLYNEUX.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE usual monthly meeting of the members was held on the 10th inst, at the Westminster Hotel, when Mr. F. W. Littlewood read an interesting and instructive essay on "The Growth and Commercial Value of Different Trees." After adverting to the manner of the growth and the way in which trees take up nourishment, he referred at length to the difference of the grain of many varieties of timber as we see it when prepared for commercial purposes. He exhibited specimens of a great variety of woods to illustrate the many and varied ways in which trees build up their cellular tissue. The essay was thoroughly enjoyed by all present, and a lengthy and interesting discussion followed.

The exhibits were plants in bloom for the professionals, when the awards were—First, Mr. W. Topham; second, Mr. R. Agar; and third, Mr. T. Brewer. The amateurs exhibited cut flowers, and some excellent Roses and Orchids were staged with the other blooms. Dr. Banham secured first, Mr. W. Willgoose second, and Mr. W. Green third prizes. The plant exhibited by Mr. Topham was a specimen of *Anthurium Schertzerianum* carrying a large number of very fine spathes, for which the Society's certificate of merit was awarded. Dr. Banham exhibited some fine Roses in addition to his competitive exhibits.

The meeting was depressed by the news that Mrs. Matthewman, wife of the proprietor of the hotel, who was one of a party of the members of the Society and their friends who met with an accident to their conveyance on the previous Saturday after visiting Topley to see the show of Daffodils, was in a very dangerous state and not likely to recover, and who died on the following day (Thursday).

The usual routine business and the admission of a number of new members closed the meeting, prior to which a vote of thanks to the essayist, Mr. Littlewood, and to the Chairman, Mr. John G. Newsham, was passed.—J. H. S.

KIDDERMINSTER AND DISTRICT HORTICULTURAL SOCIETY.—The usual monthly meeting of this newly formed Society was held on Wednesday evening, May 10th, when a most instructive paper on the cultivation of the Tomato was given by Mr. A. Combes, of Hagley, for many years gardener at Himley Hall, Dudley. J. H. Watson, Esq., occupied the chair. Mr. Combes commenced with the history and introduction of the Tomato, giving practical details for its successful cultivation, with a reference to the diseases which have caused so much havoc amongst Tomato plants. As Mr. Combes is well known as a successful cultivator of most plants in the garden, his remarks were highly appreciated, a vote of thanks being accorded him at the conclusion of his able address. Though the Society has been formed since the commencement of the present year only, it has a membership of more than 150 under the presidency of Sir A. F. Godson, M.P., F.R.H.S., and an influential list of vice-presidents, and having met with so much public sympathy, the Committee proposes to hold a floral fête in August. Kidderminster being easy of access from most of the west Midland manufacturing towns, as well as being central for a thickly populated district, it is hoped the venture may prove a success. The Hon. Secs. are Mr. Thos. Rogers, Brookfield, Blakebrook; and Mr. F. Whicker, Summer Hill Gardens, both near Kidderminster.—W. H. W.



ROSE SHOW FIXTURES IN 1899.

- JUNE 13th (Tuesday).—Cambridge.
 „ 14th (Wednesday).—York†.
 „ 21st (Wednesday).—Isle of Wight (Shanklin).
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (R.H.S.).
 „ 28th (Wednesday).—Bath, Croydon, Maidstone, Reading, Richmond, and Ryde.
 „ 29th (Thursday).—Canterbury, Eltham, Norwich, and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Brockham, Ealing, Hanley*, and Tunbridge Wells.
 „ 6th (Thursday).—Colchester (N.R.S.) and Farningham.
 „ 7th (Friday).—Hereford.
 „ 8th (Saturday).—Manchester.
 „ 11th (Tuesday).—Wolverhampton.†
 „ 13th (Thursday).—Bedale, Brentwood, Helensburgh, and Woodbridge.
 „ 14th (Friday).—Ulverston.
 „ 20th (Thursday).—Salterhebble and Sidcup.
 „ 22nd (Saturday).—Newton Mearns.
 „ 25th (Tuesday).—Tibshelf.

* Show lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY.

EVERY year, particularly during the spring months, speculations are rife as to what the rapidly approaching Rose season will bring forth, and each year the popularity of the queen of flowers seems to increase. The exhibitions to be held in June and July in various parts of the country are, according to the notifications that have already come to hand, as numerous as ever, and it is to be hoped that the season will bring success to all, whether they be exhibitors or not. That the National Rose Society has done much by its magnificent shows and its various useful publications to broaden and intensify the interest in Rose culture cannot be doubted, and it is more than probable that its influence will become greater as the years roll on.

This year of 1899 brings a departure from the custom that has prevailed of late in respect of the number of shows. There have, as all our readers are aware, usually been three, one each in London, the southern, and the northern provinces, and as a rule the metropolitan and the northern provincial have brought forth the finest Roses and the keenest competition. This year, however, there will be actually two shows, as the National Society, in place of the southern provincial, will join forces with the Royal Horticultural Society at the Drill Hall, on June 27th, when an admirable display may, weather permitting, be confidently anticipated. Of the two shows arranged, we have received schedules, and they will be held at the Crystal Palace and at Colchester respectively. Of the chief features we may give a few remarks, and at the same time inform our readers that full particulars and schedules may be obtained from Mr. Edward Mawley, *Rosebank, Berkhamsted, Herts.*

CRYSTAL PALACE.

On the first day of July this resort will be a palace of Roses as well as a palace of crystal, and it is hoped that thousands of visitors will testify their admiration of the national flower, and their appreciation of the efforts of the members of the great Society by attending. As usual, the day chosen is a Saturday, than which none other could be more favourable for visitors, though we have heard exhibitors from the provinces lamenting the fact that some other day was not chosen. This, however, we believe rests mainly with the powers that be of the Crystal Palace Company.

Five and a half dozen classes are enumerated, and of these the greatest interest always settles on those that are known as trophy classes. The principal one is for seventy-two single distinct trusses, to be shown by nurserymen. This always evokes the enthusiastic attention of everyone, as the premier exhibitor holds for the year the champion trophy, in addition to a small money prize and a trophy replica. There are also second and third prizes. Chief in the amateurs' section comes the class for forty-eight distinct single trusses, the first prize in which carries honours similar in character to the nurserymen's

section. Besides this, the amateurs have a Tea and Noisette trophy class for eighteen distinct single trusses, and the excellence of these three classes alone warrants a visit to the Crystal Palace by every rosarian. It must be observed by exhibitors that Regulation xviii. refers to the trophy classes, and runs as follows:—"In classes 1, 26, and 48 the blooms must be staged in boxes of the following dimensions—viz., twenty-four blooms in boxes 3 feet 6 inches long by 1 foot 6 inches wide, and eighteen blooms in boxes 2 feet 9 inches long by 1 foot 6 inches wide, all outside measurements." This is a new regulation, over which there was considerable discussion at the Society's annual meeting, and neglect of observance will inevitably bring disqualification.

Nurserymen and amateurs have several cups for which they can compete, as well as pieces of plate. These are placed at the disposal of the Society by amateurs and professionals interested in Rose culture, and include the Dickson cup for twelve distinct varieties sent out by Messrs. Dickson & Sons, Newtownards; a challenge cup for twelve distinct single trusses from Mr. Chas. J. Grahame; the Ramsay cup for a similar number of blooms given by Captain Ramsay; the Langton memorial cup for six distinct varieties of Roses grown within eight miles of Charing Cross; and a silver cup for twelve distinct varieties of garden Roses, the donor in this instance being Miss E. Willmott, V.M.H. The special prizes, too, are numerous, and prove that the interest of many members can be expressed in a very tangible manner when the occasion arises. The entries for the Metropolitan Show close on June 27th.

COLCHESTER.

On Thursday, July 6th, or only six days after the metropolitan fixture, rosarians will wend their several ways to the grounds of East Hill House, Colchester, where, in conjunction with the local horticultural society, the second show will be held. As the Colchester Shows are managed admirably by Mr. O. G. Orpen and the Committee the meeting should prove to be eminently satisfactory, especially if the weather prove favourable. Though this show is not really so important as the London one, the schedule comprises forty classes, so arranged as to meet the requirements of all sections—indeed, this careful attention to the differences that exist in the size of collections of various growers is one of the strong features of the N.R.S. There are trophies, cups, and pieces of plate, as well as medals offered, and as East Anglia has within its area some of the finest Rose growers in the world the show should be splendid in all respects—that is, if the date be favourable to all. Classes 1 and 17 are subject to Regulation xviii., which is quoted above.

The many readers of the Journal who are exhibitors of Roses will do well to note the addition to each of the schedules relative to the size of new boxes for Roses. It says, "The Committee recommend that any exhibitor requiring new Rose boxes should have them made of the following dimensions—all outside measurements:—

For 24 blooms	...	...	...	3 feet 6 inches	×	1 foot 6 inches.
„ 18 „	...	...	...	2 „ 9 „	×	1 „ 6 „
„ 12 „	...	...	...	2 „ 0 „	×	1 „ 6 „
„ 9 „	...	...	...	1 „ 6 „	×	1 „ 6 „
„ 6 „	...	...	...	1 „ 0 „	×	1 „ 6 „

The object of this is, of course, to eventually secure absolute uniformity of size in the boxes, which is not the case at present. It will take time to do this, as many exhibitors will not feel inclined to destroy their boxes wholesale, but will probably weed them as they become damaged or dirty.

NORTH LONSDALE ROSE SOCIETY.

WHEN the North Lonsdale Rose Show was first started in 1884, very few could have imagined that the development would have been so great or the success so continuous; but the people of Ulverston are workers, and it is pleasing to be able to record another successful year's working, judging from the report of the Committee which sat on Wednesday in last week, the Chairman being Mr. James Hodgson, J.P., C.C.

The report states that they had last season the largest gate money but one, that being when the National Rose Society visited Ulverston. The archery competition in connection realised the handsome sum of nearly £30. Regret was expressed at the death of Mr. Caird, a prominent supporter of the Society, and of the removal from the district of Mr. J. T. Marsden, the well known grower. The financial statement showed a balance in hand of £38 8s. 9d.

Mr. V. C. W. Cavendish, M.P., was re-elected President, Messrs. J. and W. Smith and Young on the Committee, Mr. F. J. Harrison Hon. Treasurer, and Messrs. F. W. Poole and G. H. Mackereth joint Hon. Secretaries. The business over, a pleasing recognition was made of the services of Mr. G. H. Mackereth, than whom no man has worked harder to bring the Society into the position it now holds. It will be remembered that the popular "George," as he is familiarly known to his friends, was married last autumn to Miss Dickson, a daughter of Mr. George Dickson, head of the celebrated firm of Rose growers, Alex. Dickson & Sons, Newtownards, Co. Down; and as the minutes

of the last annual meeting stated that some notice should be taken of the services of the Hon. Secretaries, the Committee felt the present time a fitting opportunity, at least in Mr. Mackereth's case. Mr. Hodgson in making the presentation referred to it as a pleasing duty. He had the greatest possible pleasure in presenting to Mr. and Mrs. Mackereth the pretty set of flower vases, and he hoped that they might be long spared to have Roses and flowers to fill them. Mr. Mackereth expressed his deep gratitude for the gift, saying that what he had done was because he loved the flowers, and that he was always willing to work for the good of the community.

The presentation consisted of a solid silver Rose bowl, standing upon an ebony plinth, with cover for fixing and displaying flowers; and two solid silver "specimen" vases, all very beautifully embossed, and of excellent design and workmanship.

The Committee is considering the advisability of holding a Chrysanthemum Show in the district, Mr. Keiller, of Conishead Priory, promising to stage 150 or 200 blooms. The usual votes closed the proceedings.—R. P. R.

NOTES ON FORCED FIGS.

EARLIEST TREES IN POTS.

AFTER the fruit forming the first crop is cleared from the trees, recourse must be had to syringing twice a day, also watering copiously at the roots with guano or other form of all-round liquid manure. That from manure heaps and stable tanks will be improved by a little superphosphate, about an ounce to a gallon of liquor. This will enable the trees to make more vigorous growth, and it is essential that the second crop be well nourished, and the wood not over-burdened with fruit. If the second crop fruits show very abundantly, they must be thinned, leaving those at the base of the current year's growth for the crop, and not too many even there, as the vigour must not all be expended on this, or the first crop next year will be prejudiced.

Trees ripening their fruits should have lessened supplies of water at the roots, but still afford sufficient to keep the foliage in good health, and discontinue syringing the trees. A circulation of warm air is necessary for the colouring process, leaving the top ventilators open a little at night, the highest coloured fruit being the best flavoured.

PLANTED-OUT TREES.

The first crop of Figs on the earliest started trees are now ripening, and until it is perfected, a little ventilation should be allowed constantly at the top of the house, and whenever the weather is favourable a free circulation of warm, rather dry air must be afforded. Cease syringing the trees directly the fruit commences to ripen, and avoid a superabundance of moisture about the house, but a moderate amount is necessary for the health of the foliage. If a good watering is given at that time, and the surface of the border is mulched, it will lessen the need of water during the ripening process; but trees with only limited space for the roots will need occasional supplies, and none must be neglected if necessity arise for the application.

SUCCESSION HOUSES.

Attention will be needed in stopping the young shoots at the fifth or sixth leaf, to induce a sturdy habit and shoots at the right place and proper length for furnishing the trees with bearing wood evenly in every part. Crowding, however, should be avoided by removing growths that cannot have ample room for development and exposure of the foliage to light and air, rubbing off such growths early. When the shoots are sturdy and short-jointed the terminals or extension growths should not be stopped, and only a judicious number of the side shoots be pinched to form spurs.

Strong-growing and long-jointed sappy wood is best removed, but if the trees produce much of that they ought to be marked for lifting and root-pruning, or they may have the growth checked by taking out a trench down to the drainage, cutting off the roots at about one-third the distance from the stem the branches cover of trellis. This will give a sudden check, and the trees responding by concentrating their forces on reproduction, fruitfulness ensues, and the fruit is aided in developing by the fibrous root action induced. Do not give so severe a check as to cause the leaves to fall, but when done judiciously summer root-pruning is better than winter, as a year is gained. Attend to syringing the trees twice daily, and water abundantly at the roots as often as required, employing weak liquid manure, especially where the borders are small.

UNHEATED HOUSES.

The trees are showing good crops, and will with favourable weather afford an acceptable supply of fruit in August and September. The roots being confined to narrow and well drained borders inside the house, they will require copious supplies of water, and the trees will need syringing twice a day in fine weather. In cloudy weather the afternoon syringing may be dispensed with, and in bright it may be performed early, with all the solar heat that can be shut in to secure the proper drying of the foliage before nightfall. The young growths should be trained a good distance apart, so as to admit light and air freely to the wood for insuring its ripening. Avoid close stopping without due attention to disbudding, as the results are the production of a number of late growths, which do not get properly matured before the leaves fall. The best course is to secure firm, sturdy, short-jointed wood. Allow the points of the shoots to grow up to the glass, and they will then form abundance of embryo Figs ready for swelling in the spring.—GROWER.

AN AMATEUR'S GREENHOUSE.

I AM not a little proud of the achievements of my small greenhouse, and I think that I have a right to be so, for throughout the year I have always plants in flower; at times it is quite gay, while there is always in it something to admire, and in the hope of encouraging others to work on the same lines, and to obtain a like amount of pleasure as myself, I think it may be useful to say what it has lately contained, what has preceded these, and what I hope will follow after; and first, let me give a description of the house itself.

It is 20 feet long, a span roof of 12 feet wide; there is a path running down the centre formed of battens, under which pots may be stowed, and bulbs that have done flowering may be placed until they are thoroughly ripened. On each side there is a stage 4 feet wide and about 4 feet from the ground; over the pathway, during winter, shelves are laid, on which many things are placed. The house is heated by an old-fashioned flue—of course, I am aware, not as pleasant as hot water, but in a place like this, where water is so charged with chalk that we have great difficulty in keeping our kitchen range clear, the same reason which induced me not to heat the church with hot water has led me to adopt the flue plan of heating.

Adjoining the greenhouse is a lean-to of about 12 feet long, which is not heated, and is really a sort of lumber room for plants when out of bloom and for others which may be coming on. In addition to these I have a few frames which one way or another give me some help in furnishing the house. I have just had the lumber house filled with a plentiful supply of spring flowering bulbs—Hyacinths, Freesias, Narcissi, Lachenalias, and Tulips. These have all now done their duty for this year, and the very early ones, such as the Paper White Narcissus, Roman Hyacinths, and early Jonquils, are regarded as annuals, and are thrown away when their time for blooming is over. The exhibition Hyacinths, of which I grow about three dozen, are either turned out into the border or given to friends to ornament their gardens.

TROPEOLUM TRICOLORUM.

I now come to what may be called the second act of this drama, and will try to give an idea of what the house is at present. Azaleas, Fuchsias, Cyclamens, Polygala Dalmatiana, Doronicums, Cinerarias, Sparaxis, Ixias, Salvias, Acacias, Tropæolums, Arums, Schizanthus, Agatheas, Primula obconica, Primula verticillata, Babianas, Eriostemon, Iris Morea, Aphelexis, Disa grandiflora, and Disa Veitchii. I have three plants of the Tropæolum tricolorum, which are now profusely covered with bloom. It is very odd that this plant is so seldom seen, for it is of very easy culture, and forms a beautiful and striking object when in flower. My tubers, after they have done flowering, I place under the stage, and there they remain until the autumn, and as soon as their slender white shoots show themselves, they are potted in a light mixture of peat, leaf mould, a little loam, and some sand. They make additional tubers every year, and these I am glad to give away, as I have not room for more than the three plants.

AZALEAS.

I have a few nice plants of Azaleas, and as I think it is always as well to have good things which do not take up more room than indifferent ones, I select some of the best Belgian varieties; in fact, the old English raised sorts seem to have been superseded by these newer varieties. The great mountains of bloom which we used to see at our metropolitan shows are completely gone, and the Belgian varieties, which are so free blooming and so delicate and brilliant in their colouring, have taken their place. My plants are about 18 inches high, and the same across, and I am obliged occasionally to get rid of them and get smaller plants. How do I grow them? After they have done flowering I sometimes repot them, but not always, and then place them in the annexe to which I have alluded. After they have made their fresh growth I put them out of doors, protecting them from heavy rains and not in a very sunny position, and there they remain during the summer, and when the autumn rains commence they are moved under cover. I do not think it is well to repot these hardwooded plants annually, at least for such purposes as I require them; in fact I have left them for two or three years and still my plants are covered with bloom. I at one time grew some Azalea mollis, but I have been obliged, owing to want of space, to give them up.

DORONICUMS AND SALVIAS.

I find Doronicum austriacum a very useful dwarf, hardy, yellow flowering plant for brightening up the house at this early season. It is perfectly hardy, and when the plants have flowered I remove them from the house, divide them, and plant them in some shady place in the open border, from whence they are lifted in the late autumn, potted, and put into a cold frame until a place is ready for them in the greenhouse. I have two or three plants of Salvia splendens, which are most useful during the winter, and which, although they are still in flower, have pretty well fulfilled their mission. The same exigency, want of space, compels me to grow only small plants, and then turn them out into the border, and prepare fresh plants from cuttings. Callas I referred to on page 370.

CINERARIAS.

With regard to Cinerarias, there are only two or three left now in the house, as they also formed part of the early spring arrangement. What a difference there is now in the cultivation of these flowers to that which I can remember. We know nothing now of named varieties or of propagating from cuttings, nor are we troubled now with the lanky plants which used to be grown. The raisers of seedlings have vied with one another in endeavouring to produce dwarf, sturdy plants, with brilliant heads of bloom. We continually see large collections of these at the Drill Hall, and very showy and beautiful they are. Of course, being seedling plants there is no necessity for trying to keep them on, and they are thrown aside when their bloom is over.

FUCHSIA SPLENDENS.

There is one species of Fuchsia which I have grown for many years that I rarely meet with—viz., *Fuchsia splendens* (fig. 89). It is an evergreen species from Mexico, with brilliant showy scarlet and green flowers, and has the valuable property of blooming throughout the winter. It requires no particular treatment, and is valuable for cutting, and altogether is one of the best of this beautiful tribe. I have mentioned Cyclamens, but they really formed part of my first houseful, and the few that I have now are the later blooming plants. They are of Messrs. Sutton's strains; and Vulcan, a very dark crimson variety, the darkest that I know, and Butterfly, a pure white of somewhat more expanded petals than the ordinary white varieties, are, I think, their two best, though the whole strain is good. After the plants have done flowering I stand them out along with the Azaleas. It suits me better not to keep the tubers beyond three years, though I have known them kept much longer, but then they occupy more room.

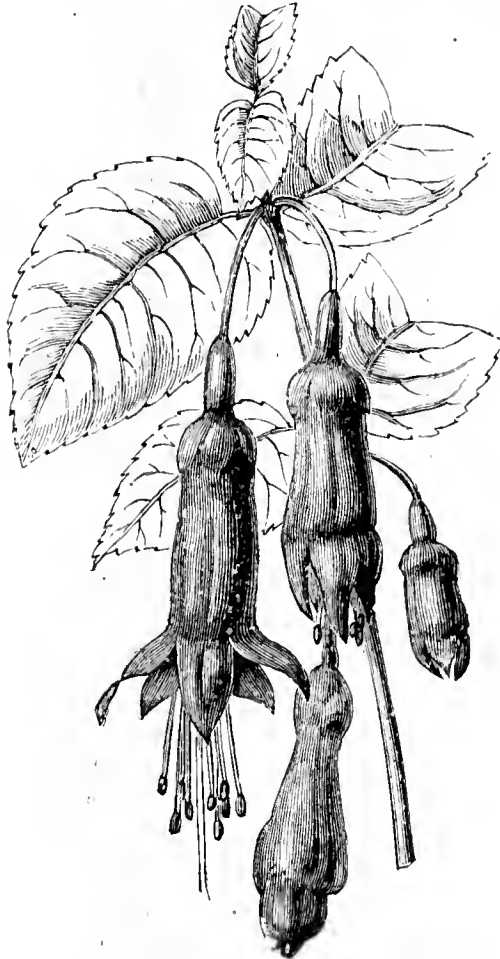


FIG. 89.—FUCHSIA SPLENDENS.

CAPE BULBS.

I always grow, at this season of the year, a few pots of those charming Cape bulbs *Ixias*, *Sparaxis* and *Babianas*. The first of these I find very difficult to keep from year to year, and there is one kind, *I. viridiflora*, with its peculiar striking green flowers, which I find impossible to retain; it may be most likely from some want of skill in my management of them, but for years I have tried to keep them, but have utterly failed to do so. With the other two I have no difficulty, and yet they are very closely allied, and come from the same part of the world. There is another bulb which I find particularly useful at this season—viz., *Allium neapolitanum* var. *Hermetici elegans*; it is an improvement on the type in the manner in which it throws up its trusses of blooms. I find it increases very rapidly, and that it is perfectly hardy, and comes up in all sorts of places in my garden.

SCHIZANTHUS.

As I have already said, I enlist hardy herbaceous plants like the *Doronicum* for the adornment of the house, so also the annuals help me, for I find no more effective or useful plant than the varieties of *Schizanthus*. I sow the seed of these somewhere about August, and when fit, pot them off three or four in a pot, and their bright colours and elegant foliage not only make them pleasant objects in the house, but they are very light and graceful for cutting and placing in vases. They vary very much in colour. I think the most striking one is *S. retusus*, but it seems also to be a difficult one, because the seeds do not germinate so well as the other varieties. Another plant which I find very useful is *Agatheae coelestis*, which I owe to the kindness of a friend. Some people call it a blue *Marguerite*, the colour is bright, and the plant is of very easy culture; I make fresh cuttings of it every year, so as to have small plants.

TWO PRIMULAS.

There are two *Primulas* which help to make up my mass of bloom, one is *Primula obconica*, about which we have heard a good deal as

to its irritating powers on the skin; it, too, is of easy cultivation, very free flowering, and easily propagated by the division of the roots; the other is *P. verticillata*, or Dusty Miller as some people call it; its whorls of yellow flowers make a pleasant variety amongst the other plants I have named. There are other things of which I have only single plants, and, as these die off from year to year, I do not think it is worth while to mention them. Of course all the plants mentioned in this notice will in a very short time be put out of the house, and I may then, perhaps, be able to show how I have filled up their places, and still keep my house gay with bloom, but I think that what I have already said justifies my remark, that I have very great reason to be satisfied with my small greenhouse.

Of course I could not have carried out all these arrangements had it not been for the care and energy displayed by my excellent gardener, who takes as much pride in our little greenhouse as its owner.—D., Deal.

PEACH BUDS DROPPING.

PEACHES grown in the open air may receive rough treatment by being frozen at night whilst in bloom, and within twenty-four hours saturated with winter rain, also undergo several weeks of drought in the summer, and yet will not drop their buds. That to my mind proves it is the artificial treatment under glass which causes disaster. I have at various times grown nearly all the varieties supplied by nurserymen in this country, and at the present time I have upwards of a dozen sorts planted under glass. These are without exception started gently into growth in December, so as to obtain ripe fruit as early as possible; and I have no hesitation in saying that it is impossible to grow some varieties of Peaches on the above lines without many of the buds dropping.

Watering and ventilation may be carefully attended to, still the fact remains that certain varieties will always cast their buds. I have heard gardeners affirm that if small-flowered varieties are grown there will be no trouble with buds dropping or the fruit not setting; but *Sea Eagle*, a large flowering late Peach, does not give trouble in this respect, and is a very free setter when forced, while the same may be said of *Dymond*. Among the small-flowering varieties that may be depended on are *Belle-garde*, *Crimson Galande*, *Belle de Doué*, *Royal George*, and *Barrington*.

Some of the worst varieties to cast the buds include *A Bee*, the different forms of *Grosse Mignonne*, and *Alexander*. The latter, when grown under glass does not cast its buds like the other varieties mentioned, but they appear to remain in a dormant state, so that there is often a difficulty in furnishing the tree with young growth. It is, however, not surprising that this should be the case when one takes into consideration the long season of rest it has after being forced; our fruit was all gathered in April this year. Some trees of *Alexander* that had been grown under glass for several years were lifted two years ago and planted against an open wall, and in this position they thrive remarkably well; every bud will form a shoot if necessary, clearly demonstrating that it is more at home in that position than when grown under glass.—S., Yorks.

ON SPRAYING FRUIT TREES.

IN my last note on this subject, of April 27th, page 335, I begged leave to give the results of a second dressing of caustic soda and pearlash, for the extermination of American blight. The solution consisted of 1 lb. caustic soda and 1 lb. of pearlash to 5 gallons water, instead of 10 gallons, as heretofore.

Mr. Hooper's remarks on spraying in Nova Scotia induced me to try this strength. Instead of using it in April, say from 20th to 25th, before the leaves expanded, I was delayed until 1st May, which I think rather too late. Its effects were unmistakeable. It was present death to blight, to the fresh growths of leaves, grass, and everything in a young and tender state. A trail of ants passing up and down the tree stems was killed instantly the spray touched them. The American blight turned black, and when examined next day had quite dried up. Whatever good the solution at this strength may be in winter, I have no hesitation in declaring it too strong for spring use. On re-perusing Mr. Hooper's article I note he uses caustic potash, whilst I used caustic soda. These substances are not identical, although both are of a burning nature; I point this out lest they should be taken for one and the same mineral, just as pinching and summer pruning are taken by some to be synonymous, but are not so.

My trees are freer from the grub of the codlin moth than in former years. This I attribute to the overhead spray. Should, however, this pest re-appear the Vermorel would at once be brought into action, charged with the following solution of Bordeaux mixture and Paris green—viz., Combine 6 lbs. copper sulphate and 4 lbs. quicklime with water enough to make 50 gallons. The copper sulphate is dissolved in water (hot, if prompt action be wanted), and diluted to about 25 gallons. The fresh lime is slaked in water, diluted to 25 gallons, and strained into the copper solution; after which the whole is thoroughly stirred with a stick. Both the copper and lime mixture may be kept in strong solution, as stock mixtures; but when combined should be promptly used, as the Bordeaux mixture deteriorates by standing.

It is one of the very best combined insecticides and fungicides when 4 ozs. of Paris green has been well stirred into it—viz., 4 ozs. per 50 gallons. As Paris green is a heavy powder, it must always be stirred before the knapsack sprayer is filled with it.—JNO. MILES, Southampton.



RECENT WEATHER IN LONDON.—The amount of rain that has fallen in the metropolis since Saturday last has been very considerable, though showers with intermittent sunshine have been the order of the day. On Tuesday a heavy thunderstorm visited the northern suburbs, and elsewhere rain fell heavily. Wednesday opened squally, but bright and fine.

— WEATHER IN THE NORTH.—Winter seems reluctant to relax his grasp. While there has been no frost during the past week, the north-easterly winds generally prevalent have been very chilling. The days have had little sunshine, and much rain has fallen, especially during the night. On Sunday a short sharp thunderstorm passed in the south; sleety showers occurred, but the afternoon and evening were rather milder. Monday morning was cloudy but not cold, with every promise of more rain.—B. D., *S. Perthshire*.

— MYOSOTIS AND WALLFLOWERS.—One of the simplest, but one of the prettiest, spring beds we have is composed of Wallflower Prince of Orange and Golden Bedder in round panels, the groundwork being all blue Forget-me-not. Both are now in full beauty, and the effect of the golden yellow against the sheet of blue is very fine. The bed is about 20 feet in diameter, so it is large enough to show at a distance. The position is so exposed that nothing very tall can be used even in summer, but these dwarf and strictly hardy plants fill the breach admirably in every way.—H. R.

— FRUIT GROWING IN WASHINGTON.—The State of Washington has been surely forging ahead during the recent years as a fruit-growing State. J. E. Baker, State horticulturist, has gathered some valuable figures showing the present orchard conditions. During the two years he has been in office 600,000 fruit trees have been planted, or nearly one-quarter of the total number of fruit trees in the State. The report shows that there are 2,414,626 fruit trees in the State, and of that number 1,410,194 are in the counties east of the Cascade range, and 1,004,432 in the counties west of the Cascades. Mr. Baker's estimate, says an American contemporary, of the value of the fruit crop of the State is between 750,000 and 1,000,000 dols. annually.

— THE ROYAL HORTICULTURAL SOCIETY OF IRELAND.—A Council meeting of the members of the Royal Horticultural Society was held at the offices, 61, Dawson Street, Dublin, on 9th May. Sir Percy Grace, Bart., occupied the chair, and the following members were present:—F. W. Burbidge, Esq., M.A., Major Domville, J.P., Rev. J. C. Hayes, M.A., D. Ramsay, Esq., H. Crawford, Esq., H. Smallman, Esq., and Greenwood Pim, Esq. The Secretary (Mr. W. H. Hillyard) having read the minutes of the last meeting, these were then passed and signed. R. Dunlop, Esq., and F. W. Sharpe, Esq., were proposed for membership, and were duly elected. Arrangements were made relative to the summer Rose show, to be held in Merrion Square on Thursday, June 29th. The proceedings were then brought to a close.

— EARLY POTATOES AND THE FROST.—It is surprising to note the effect in different gardens, quite irrespective of shelter or situation, that frost has upon early crops of Potatoes. It is usually thought that proximity to water has much to do with this question, and that gardens so situated are more likely to have the early crops injured than others. This may be so when the situation is very low, but the mere fact of the presence of water does not affect them. Here, in spite of careful covering, the points of the growth of Hammersmith Kidney, Ninetyfold, Myatt's, and other early varieties are crippled, though the situation is high and dry. At Kentwell Hall, Long Melford, on the other hand, there are beautiful rows with not a single blemished leaf, yet there is a full moat all round the garden, and no covering has been practised. Those having a fairly dry and light soil have, of course, a considerable advantage over others whose soil is close and heavy; but much may be done in the latter case by the addition of plenty of burnt earth and garden refuse—one of the most useful aids to culture of vegetables and fruit, inside and out. A little of it placed along the drills at planting time is of great assistance, encouraging the roots, and being very distasteful to slugs and snails.—H. RICHARDS, *Coldham Hall*.

— CROWN ANEMONES.—These are beautiful and varied plants, and no garden is complete without a few of them. The colours are wonderfully rich and varied, and in many old places, where the soil is light, they reproduce themselves from seed freely, countless variations occurring. The shape, too, varies considerably, and among the double forms are some exquisitely quilled and fluted flowers in almost every shade of colour. The tubers are very cheap, and in gardens where they do not flourish a succession may be kept up by lifting annually, enriching the soil with leaf mould, and making good any losses that occur by purchasing new stock.—T. G. S.

— GRAPE MADRESFIELD COURT.—This is one of the choicest and best of Grapes, and does well in small houses and borders. There are many small gardens where perhaps only one vinery exists, and this in many cases is filled with Black Hamburgh, to the exclusion of all other and better flavoured Grapes. This popular variety is, of course, one of the most useful, but there is always room for a change, and anyone looking for a good black Grape may do worse than plant Madresfield Court. It colours best under a good canopy of foliage, and a little lateral freedom should be allowed when the berries are colouring.—H. R.

— PLANTING OLD v. FRESHLY-CUT POTATO SETS.—There is much difference of opinion as to whether it is better to plant Potato sets the day they are cut, or to allow them to remain for several days, or even longer, before they are put in. To test the relative merits of both systems an experiment has been conducted at the Ontario Agricultural College, and the results go to show, says the "Irish Farmers' Gazette," that the best yields have been invariably obtained where the Potatoes were planted the same day as they were cut. The experiment has now been in progress for four years, and the average yield during that time was over eleven bushels per acre in favour of the Potatoes planted on the same day as they were cut, as against those not planted until four days after being cut.

— ISLE OF WIGHT.—The monthly meeting of the I.W. Horticultural Improvement Association was held at Sandown on Monday, May 8th, Dr. J. Groves, B.A., J.P., presiding over a good attendance of members. The Honorary Secretary (Mr. S. Heaton) gave an interesting lecture on "Horticultural Subjects," which was profusely illustrated with lantern slides, kindly lent by Messrs. Sutton & Sons of Reading. Mr. W. W. Sheath of Ventnor received the Association certificate for cultural merit for a magnificent collection of seedling Amaryllis. Ten new members were elected, which brings the total number to 350. A vote of thanks to the lecturer brought an enjoyable and profitable evening to a close. Arrangements for the Brook and London (Temple Show) excursions were made previous to the lecture.

— WATERING FRUIT BORDERS.—There is great risk now of vinery and other fruit borders getting too little water. The growing crops and ample foliage call persistently for moisture, and whether inside or out the borders soon get dry. Figs are very thirsty plants, and many a promising first crop of fruit has been ruined simply by want of moisture. The borders for this luscious fruit are not often made very large, for when planting young trees their shoots are frequently so vigorous that they need checking in some way, and a great amount of loose soil would be detrimental. But afterwards, when the borders get full of roots, feeding is necessary, and this means moisture. Grapes and Peaches or Nectarines, again, after the stoning is finished, lay on flesh rapidly, and unless abundance of moisture is present they will suffer. Bud dropping in early forced trees of the latter is often caused by lack of moisture just at the period of finishing up the growth, and thus the ensuing season's crop suffers from neglect in the present. Pot trees need even more feeding and moisture, and in every department where fruit is grown there is room for ample supplies now.—B. S. E.

— SINGLE WALLFLOWER EASTERN QUEEN.—A good strain of this beautiful and distinct variety is one of the most attractive of the Wallflower family. I have before me a bed of it, each plant being one mass of bloom, the flowers in their different stages varying from creamy white to pinky apricot. The habit of the plant is dwarf and compact, and the terminal flowers are well advanced before the lower ones begin to show signs of decay, which gives it added effect. If planted in conjunction with Little Giant or any other good strain of a dwarf-growing dark variety the effect is striking and beautiful. Amongst the lighter shades Primrose Dame, Golden Beauty, and Tom Thumb Golden are distinct and pleasing, but Eastern Queen seems more in keeping with the present day fashions.—GEO. PAXTON. [Our correspondent sent us a charming bouquet of these delightful spring flowers, amongst which, besides the novel colours, Dickson's Golden Queen and Selected Red were highly effective.]

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
May.										
Sunday .. 7	E.N.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday... 8	N.N.E.	53.5	46.1	61.5	37.1	—	48.9	49.6	48.9	28.1
Tuesday .. 9	N.N.W.	59.5	51.8	64.2	42.6	—	50.5	49.8	48.9	36.0
Wednesday 10	N.N.W.	49.7	49.5	58.5	46.9	—	52.5	50.5	48.9	44.2
Thursday 11	N.N.W.	54.7	50.1	61.9	39.0	—	51.9	50.8	49.1	30.8
Friday .. 12	S.S.W.	49.4	47.7	66.9	40.3	—	52.8	51.3	49.1	34.1
Saturday 13	S.S.W.	55.1	50.6	62.9	46.8	—	54.5	51.8	49.5	39.3
		51.8	48.5	61.8	45.7	0.01	54.5	52.3	49.7	38.5
MEANS ..		53.4	49.2	62.5	42.6	Total 0.01	52.2	50.9	49.2	35.9

The weather has been dull and dry with variable cold winds. The only measurable quantity of rain which has fallen this month was on the 13th.

THE ROYAL GARDENERS' ORPHAN FUND.

IF of any satisfaction to "Another Country Gardener," I will at once freely acknowledge that I did not understand the working of this Society. If subscribers are satisfied, outsiders have nothing whatever to do with it. I may, however, remind him that "A. D." whom I presume is a subscriber, asked, on page 153, "To what is this indifference on the part of gardeners due? Can anyone explain it?" On page 257 I stated what the feeling was among subscribing gardeners in the provinces. This was corroborated by "A Country Gardener." But all the information "A. D." gave, on page 302, is an exercise in figures—namely, "that a sum of £50 was allowed for office expenses to the then Secretary. Now that the salary of 100 guineas includes the 50 guineas formerly accorded for that purpose, and pay for clerical help, the actual pecuniary recompense cannot be more than 50 guineas per annum." "A. D." has endeavoured to prove (but has not succeeded) that two fifties do not make a hundred. If the above is satisfactory to "Another Country Gardener," there are many others who will reasonably ask why it is necessary for the Secretary to pay 50 guineas a year for clerical help? If he devoted the whole of his time to the work for which he is paid, this would not be necessary. Also if a gardener subscribed for a given number of years, and should his children unfortunately require assistance, what security is there that they would obtain it from the above funds?—S., Yorks.

[Our correspondent is not aware that both the late and present Secretary, as well as others who helped in the formation of this excellent charity, were, in addition to the time they gave in doing so, pounds out of pocket in meeting initiatory expenses, and the last thought of any of them was to have the outlay refunded. If "S., Yorks," were condemned to live and pay rent in or near London and "devote all his time" to any particular object for 100 guineas a year, he would, no doubt, complain strongly, and with much better reason than he has now, of that amount being paid for the purpose suggested. If all the gardeners in the kingdom, who are as well able to subscribe 5s. a year as our friend "S." is, were to become active members of the well-established Fund (that has already done untold good), no long time would elapse before at least one child of a deceased subscriber would, if in need, receive substantial assistance. More than one child of a family has already been a beneficiary. Far more than the secretarial and management expenses are met by the generous gifts of friends who are not gardeners. The greatest mistake made in the increase in the Secretary's salary was in deferring it so long. We hope that as every penny subscribed by gardeners actually goes to the indigent children of their deceased brethren of the craft, our acute correspondent will not be content till he sends us a donation to forward to the Secretary, and if it be a good one "A. D." will not mind the little pleasantry indulged in in the above critique. It is largely by secretarial efforts in various ways that hundreds of pounds are obtained for the charities which they represent, and not a few of such officials earn their salaries over and over again. We are not inclined to publish any further letters, that, though not in the least intended to do so, may have a tendency to injure rather than help the highly useful and carefully managed Royal Gardeners' Orphan Fund.]

NATIONAL AURICULA SHOW.**NORTHERN DIVISION.**

THE annual exhibition of the Northern Division of the above Society was held in the Coal Exchange, Manchester, on the 5th inst. The Show was, at one time, part of the spring exhibition, but an alteration of date in this fixture led to a change. Subsequently the growers of Auriculas had an exhibition of their own at the Society's gardens. The more recent shows have been held at Middleton. In that town the cultivation of the flower is very popular with amateur gardeners, the records show-

ing that exhibitions of Auriculas were held there 150 years ago. For a variety of reasons the Committee decided on a return to Manchester. The present Show was, in point of excellence, equal to its predecessors. Its features included new varieties exhibited by Mr. Tom Lord of Todmorden, Mr. Ben Simonite, and Mr. R. Gorton of Eccles. The premier prize for the best Show Auricula was awarded to Mr. T. Lord for Abraham Barker, and Mr. A. R. Brown, Handsworth, Birmingham, gained a similar distinction in the Alpine class. Mr. H. Stringer exhibited the best plant of Polyanthus, to which the premier prize was awarded, and Mr. Frank Law of Sale put up a fine collection of Narcissi. The following is a list of the principal awards.

For six dissimilar Show Auriculas the first prize went to Mr. T. Lord, the second to Mr. B. Simonite, the third to Mr. A. R. Brown, and the fourth to Mr. J. W. Bentley. Four dissimilar.—First Mr. T. Lord, second Miss Woodhead (Halifax), third Mr. W. Shipman (Altrincham), and fourth Mr. J. Clements (Birmingham). Pairs.—First Miss Woodhead, second Mr. Stelfox (Stalybridge), third Mr. W. Kershaw (Ashton-under-Lyne), and fourth Mr. R. Gorton. Single plants, green edges.—Mr. T. Lord secured the first, second, and fourth prizes, and Mr. B. Simonite the third prize. Single plants, grey edges.—First Mr. B. Simonite, second Miss Woodhead, third Mr. T. Lord, and fourth Mr. J. W. Bentley. Single plants, white edges.—Mr. T. Lord secured the four prizes. Single plants, selfs.—First Mr. T. Lord, second Mr. J. W. Bentley, and the third and fourth prizes fell to Mr. B. Simonite.

In the Alpine section, for six dissimilar, shaded, the first prize was awarded to Mr. A. R. Brown, the second to Mr. J. Beswick (Middleton), the third to Mr. R. Gorton, and the fourth to Mr. T. Lord. Four dissimilar.—First Mr. J. Beswick, second Mr. J. W. Bentley, third Mr. T. Lord, and fourth Mr. A. R. Brown. Pairs, dissimilar.—First Mr. J. Clements, second Mr. T. Buckley (Stalybridge), third Mr. J. W. Bentley, and fourth Mr. S. Wardle (Ashton-under-Lyne). Pairs, for maiden growers.—First Mr. S. Wardle, second Mr. R. Holding, and third Mr. P. Holdam (Middleton). Single plants.—The first, second, and fourth prizes went to Mr. A. R. Brown, and the third to Mr. J. Clements. Single plants, white centres.—The first, second, and fourth prizes to Mr. A. R. Brown, and the third to Mr. J. Beswick.

For Polyanthus, black grounds, three dissimilar.—First, Mr. H. Stringer; second, Mr. J. Blowick; third, Mr. J. Oldham, and fourth, Mr. G. Thornley (Middleton). Red grounds, three dissimilar.—First, Mr. G. Thornley; second, Mr. J. Beswick; third, Mr. T. Oldham. Single plants, black grounds.—First and second, Mr. T. Oldham; third and fourth, Mr. J. Beswick. Single plants, red grounds.—The three first prizes went to Mr. G. Thornley, fourth Mr. J. Beswick.

NATIONAL TULIP SOCIETY.

MAY 17TH.

THE sixth exhibition was held at the Royal Botanic Society's Garden, Regent's Park. The exhibition was somewhat small, but the blooms excellent. Many exhibitors were absent owing to the late season.

In the premier class (Barr's cup) for eighteen dissimilar Tulips, two feathered, two flamed, and two breeder of each class, Mr. J. W. Bentley, Castleton, Manchester, was placed first. The varieties were Clio, San Jose, Julia Farnese, Masterpiece, Chancellor, General Grant, Othello, Annie McGregor, Adonis, Excelsior, Ashmolus, Mabel, Rose Hill, Adonis, Goldfinder, Annie McGregor, Excelsior, and W. Parkinson.

For twelve dissimilar rectified Tulips Mr. A. D. Hall, Wye, Kent, was placed first with a fine stand. The varieties employed were Samuel Barlow, Count, Annie McGregor, Adonis, Proserpine, Sir Joseph Paxton, Sarah Headley, Aglaia, Lord F. Cavendish, Trip to Stockport, and George Edward. Mr. C. W. Needham, Royton, Manchester, was placed second with good flowers of Duchess of Sutherland, Annie McGregor, Clio, and Talisman; and Mr. A. Chater, Cambridge, third with good specimens of Black Prince, Modesty, Masterpiece, and Guido.

For six dissimilar rectified flowers, Mr. Bentley was placed first with San Jose, Mabel, Lilian, Farnese, Trip to Stockport, and Masterpiece. Mr. A. D. Hall was second with Attraction, Aglaia, Adonis, and Duchess of Sutherland; and Mr. C. W. Needham third. For three feathered Tulips, Mr. Bentley was again placed first with Modesty, Guido, and Masterpiece. Mr. A. Chater was second with Modesty, Masterpiece, and Adonis. In the class for three flamed varieties, Mr. A. D. Hall was first with excellent flowers of Talisman, Dr. Hardy, and Aglaia, and Mr. Bentley second.

For a pair of blooms, one feathered and one flamed, Mr. C. W. Needham was first with capital examples of Modesty and Samuel Barlow, Mr. Bentley second, and Mr. A. D. Hall third. The class for six dissimilar Tulips was a good one. Mr. A. D. Hall secured the first prize with a capital exhibit; the varieties were Lady Grosvenor, Wm. Lea, Adonis, Annie McGregor, Goldfinder, and Talisman. Mr. C. W. Needham was second, and Mr. A. Chater third. Mr. A. D. Hall was again first for three dissimilar breeders with Maid of Orleans, John Heap, and Annie McGregor. Mr. Bentley was second, and Mr. G. Edom, Walton-on-the-Hill, third.

POTATO "UP-TO-DATE."—Mr. E. Molyneux's strongly worded statement on page 385 may disconcert a few. But there is another side to the question. "Up-to-Dates" have been at the top of the London market for some time, and I know growers in the Lothians who are sending "Up-to-Dates" to London and getting £4 per ton for them F.O.B. Leith.—W. C.

A GAY CONSERVATORY.

THE show of Azaleas in the conservatory at Walton Lea (the residence of John Crosfield, Esq.) is at present very beautiful, and has been admired by many visitors. The photograph (fig. 90) gives but a very slight idea of the effect produced by the arrangement of the colours of the following varieties:—Alexander II., Apollo, B. S. Williams, Bernhard Andreas alba, Balsaminiflora, Criterion, Duc de Nassau, Eclatante, Emperor de Brazil, Iveryana, Illustris, J. B. Veronne, Louise Vervaene, Mad. Marie Van Houtte, Mad. Camille Van Langenhove, Medel, Mad. Van der Cruyssen, Othello, President, Roi de Holland, Roi des Belges, Reine des Pays Bas, Simon Mardner, Stella, Souvenir du Prince Albert, Striata, Sigismund Rucker, and Versicolor.

The conservatory is 40 feet long by 25 feet wide. There are two groups, arranged in the centre: the first with small plants of Azaleas, including mollis and Ghent varieties, with Ferns between them, and a very fine Rhododendron Veitchianum, 6 feet high, in the centre. The second group is composed of fine pyramidal Azaleas 7 to 8 feet high, with Araucaria excelsa in the centre. Acacias, Cytisus, Deutzias, with other flowers and Ferns, impart variety to this beautiful group.

At the end of the conservatory three Camellias are planted out, and in the side borders there are the following climbers covering the span roof:—Cobaea scandens variegata, Lapagerias alba and rosea, Passiflora, and Tacsonia.

Suspended from the roof are eight baskets of *Platycerium alcicorne*. In the ornamental wirework at the bottom of one of these baskets a wren has built her nest, a very unusual place for such a purpose.

Great care is taken with the Azaleas after they are out of bloom to promote fresh growths and the formation of buds for another season. With this object in view the plants are carefully watered, and kept free from thrips and other enemies. Though some of the largest plants have not been repotted for twenty years, they are still in a healthy floriferous state, and reflect no small credit on Mr. W. Kipps, the able gardener, and his attentive assistants.

AN HOUR AT SHIRLEY.

THE "Shirley hills," with the common and Pine woods, form a favourite rendezvous for thousands of town and City dwellers who from time to time find, as adults, a day of recreation from labour, and, as children, the equally enjoyed escape from schools. The district may be described as a health resort, secured by the Municipal authorities of Croydon for the benefit of the public. Though only some two miles from the most populous town in Surrey, the inhabitants of which number nearly 140,000, the plantations are alive, so to say, with nightingales, which seem as much at home during the season as if they were ten times as far from the busy haunts of men.

The name of "Shirley" is, however, more associated with Poppies than nightingales by horticulturists, because from the vicarage garden there emanated the chaste and charming strain by the aid of which thousands of gardens over the length and breadth of the land have been made gayer and homes innumerable more beautiful by the presence of these variedly attractive flowers.

The vicar of Shirley is not only a lover of gardens and of everything good that grows in them, but a thorough gardener. He is capable not only of directing soundly, but of doing work of various kinds as well as is done by most professionals in the craft, and in some things a good deal better than many. Take, for example, the pruning of fruit trees. They are not cut into fanciful shapes, but long branches are formed wreathed with blossom from base to summit, to be followed, weather permitting, by fruit as thickly packed as "ropes of Onions," rendering thinning as much a necessity outdoors as it is under glass in the case of overlaid Peach and Nectarine trees in pots.

It seems appropriate that the Secretary of the Royal Horticultural Society should be such a real and actual gardener as he is, and it was in his garden that an hour was spent the other day. His invitation arose from the promptings of a kind heart, and his last thought would be that any more would be heard beyond the acceptance, for the sufficient reason that the recipient was supposed to be an overworked, broken-down journalist, incapable of using the pen, and in need of a few days change and quiet rest. But devotees of the pen and of gardening will only rest when they must, and will work while they can, be it ever so badly; and thus the "days" of rest were cut down to hours, and Mr. Wilks must be content to feel himself a victim of the revival of his enfeebled guest.

The vicarage is not a modern ornate structure of pointed gables and florid architectural indulgences. There is nothing of pompous

villadom about it, as in so many instances where "show" rules supreme. No; it is an unpretentious home in which internal convenience and comfort were more considered than external display by the vicar who built it some half a century ago. In these respects it suits the present occupant exactly, but the garden, when he took possession about twenty years ago, did not suit him at all.

His predecessor it seems was a gardener in his way, and that way appears to have had a touch of originality about it. He believed in the mixed system. Some half dozen miniature kitchen gardens "all over the place," in association with patches of lawn, beds of flowers, and clumps of trees represented the good old man's ideal of what a garden should be. He no doubt enjoyed it, and such quaint old gardens possess a charm to persons who set greater store by a tangle or jumble than on the satisfactory development of whatever may be grown, and on the health-giving influences of sun and air.

Trees when first planted and for a time afterwards, may not be too numerous for furnishing the surroundings of a home, but when they grow unthinned year after year till they meet in persistent combat for the space they need, the result is not an assemblage of beautiful trees—not a garden at all, but a scene of spoliation, a wreckage, wilderness, or ruined plantation. How many of what might have been noble trees and handsome shrubs, are to be seen and grieved over at this moment in various parts of the country, and all for the want of timely, reasonable, rational thinning? They are in thousands, even millions, more's the pity, and the work of restoration under such circumstances is a task of no small difficulty.

Mr. Wilks had recourse to a thorough remodelling, and he has good reason to be satisfied with the results. Such trees and features as could be effectively retained were not interfered with, except they could be improved. For instance, the grand Holly hedge which forms the boundary along the highway was not likely to be otherwise than cherished. It is about 50 yards long, wide and lofty—a truly ponderous hedge, the equal of which is seldom to be seen. It is clipped annually in April, and the men are no doubt glad enough when it is done. The entrance to the vicarage is through this dense green screen.

On the right-hand side of the door, which faces north, a contorted stump-like object arrests attention. It is the trunk and lower branches of an old Wistaria, the growths of which are trained round the west and south sides of a verandah, which is a convenient and picturesque adjunct of the vicarage. It is wide and lofty, and as the wall of the building is covered with *Solanum jasminoides*, Roses, and other climbers, and the raised border at the base is made bright and sweet by appropriate flowers in spring and summer, the florally covered way forms a charming retreat during warm days early in the season, and on cool quiet evenings after sultry days; externally the verandah is covered with the Wistaria and *Clematis montana*, which also ramble up the wall above, producing festoons of charming flowers at this period of the year.

From the verandah we step to the lawn—an expanse of an acre or two, bounded by a semicircular line of Elms planted by the late vicar, with a bold frontage of Rhododendrons provided by Mr. Wilks. Here and there in the distance ancient Apple trees, the remains of past orchards, are left standing on the lawn, and clumps of Rhododendrons have been established. Other fruits have been honoured by positions, or the lawn and shrubbery have been honoured by them, for no trees are more ornamental when in their charming garb of spring, while they are attractive in a different way in the autumn. In the centre of the lawn a Dartmouth Crab gives first its chaste flowers and then its brilliant fruits. Mr. Wilks is an æsthetic-utilitarian, and happily combines beauty with usefulness on his admired lawn and its immediate surroundings. At the present time beauty predominates, as combined in the wealth of Apple blossom and glowing masses of Rhododendrons.

Nearer the house is the flower border—a broad frontage to a bank of shrubs, with fruit trees rising above them, a twisting walk leading behind to a secluded rockery, bright with established bulbs in spring, cool and refreshing by hardy Ferns in summer. But the lawn front is only massed with flowers towards the end of the present month. Throughout the winter it is furnished with choice Conifers, bright coloured evergreens, and Ivies, plunged over the rims of the pots in which they have been established for many a year. They are removed at this season and replunged in their reserve quarters for affording space for summer flowers, so that this prominent border is rendered attractive practically all the year round.

On the east of the vicarage a portion of ground is screened from the lawn, and there we find sundry frames, packed with plants of course, as lovers of gardening will pack them. Beds of various

kinds of flowers, not omitting Poppies and Daffodils; a model Beurré Hardy Pear tree, and a long, high-sided span-roofed house packed, like the frames, with a great assortment of plants between the large pots of Peach and Nectarine trees.

These trees, about two dozen, are free informal standards, laden with thousands of fruits. They are tall enough to walk under, and in looking upwards the fruits seem closer together than stars in the firmament. To the question, "Why don't you thin them, Mr. Wilks?" comes the quick reply, "They have been thinned; they have to be

(outside) for the winter, and brought under glass in February. The pruning resolves itself into a common-sense system of thinning, to prevent overcrowding in the summer, and the prodigious weight of fruit prevents any approach to luxuriant fruitless growths.

As has been said, the house is packed with plants. Along one side is a row of *Lilium auratum*, the increase from one bulb, remarkable for their vigour, with stems as thick as walking-sticks, and 6 feet high. There scarcely seems room for another pot, but where there is an opening for the apex of a Tomato plant it is directed to it, and pokes



FIG. 90.—THE CONSERVATORY, WALTON LEA.

thinned once, twice, thrice, and the difficulty is to know how far to go, and when to leave off. We left 300 dozen to ripen last year." The productiveness of the trees is extraordinary, and in no other way than by the very best of management could they be kept in such a healthy state as to produce and mature such exhausting crops year after year.

With well selected varieties a regular succession of fruit is had from early summer to the autumn; and all is done so easily. As the crops are gathered the trees are stood outside, put in order at the roots, and fresh soil given towards the end of the season, safely plunged

its way through as best it can to the upright glass sides of the structure, and scrambles up between the general stock and the Peach trees, thus by-and-by giving fruits to lean their ruddy cheeks against the glass. We hear of stolen crops in gardens, but this is like a stolen crop under glass, and if there is a house in England that yields a greater amount of produce for its size than this does it would be worth going far to see.

The model Pear tree mentioned is not in the house. It is what may be termed of natural pyramidal form, or, in other words, has been allowed to assume the shape peculiar to the variety. It is some

20 or more feet high, and about the same in diameter at the base. The tree was, no doubt, cut back once or twice during its early years, but since then there has been little or no shortening of the main branches; the production, however, of an undue number has not been allowed. The result of this "open door" policy to sun and air is seen in the long, cordon-like branches, emanating from the central stem, each clustered with spurs from end to end. Why so clustered? Because (1) there has been no violent shortening of the terminals to force into wood growth hundreds of buds that have in consequence been permitted to change into a blossom-producing character; and (2), when these were once formed they have been enabled, not only to retain their vigour, but to increase in number, because the distances of the branches are such as would enable an ordinary sized man to pass between them, if sufficiently agile, without losing his hat. This is decidedly better than a man losing his head when he has a knife in his hand, and prevents the fruit that he foolishly imagines will follow his thoughtless mutilations.

Much has been heard of "summer pinching" of late; trees of the pattern described need little, if any, summer pruning either, for the sufficient reason that they produce few lateral growths, often only sufficient to incite free sap movement, and this without shading the leaves of the spurs. When trees are brought into that condition they require very little pruning at any time, and in the case of not a few the work is completed in one operation some time before the fall of the leaves; but there are thousands of other trees, not at Shirley, to which those remarks do not in the least apply.

On the western side of his enjoyable lawn, and beyond its boundary trees, Mr. Wilks has another garden—a slice taken off a small field. Here there are Apple trees mainly, much younger than the model Pear, but pruned on the same sound lines for fruit production—i.e., each variety is permitted to develop its own habit, and all the pruner does is to give the trees the best possible chance to form fruit buds, by so regulating the branches that the sun's rays can pass freely between them when the leaves are fully expanded. The pruning thus amounts to thinning as may be required in the summer, and the first small leaf buds are changed into bold blossom buds accordingly. Hundreds of owners and so-called managers of fruit trees do not know this, though the number, one would fain hope, is steadily diminishing. Unfortunately many fruit tree butchers rejoice so much in their self knowledge, the true name for which is gross ignorance, that they read neither books nor papers, or they might take a lesson from Shirley through the medium of these lines.

Mr. Wilks grows his vegetables in this western annexe, and not these alone, for he has a mixed flower border there, not a mere attenuated strip 3 or 4 feet wide, but in places nearer four times that width; nor is this a higgledy-piggledy wild garden, however enjoyable such may be in its right place, but all the varied plants are cultivated, and the owner can march about amongst them and cut armfuls of flowers if and when required for church or other forms of decoration, and for making his friends happy by a parting gift for their flowerless homes.

And how deftly and neatly he does it. "You will take a few Daffodils, Mr. Scribe," and forthwith a handful is gathered from the bright dancing masses—not "old" flowers that are over in a day, but young and fresh that last for a week—and cutting the stalks level they are pressed down into a long strong envelope, a couple of india-rubber rings grip the "handle" with just the right pressure, yet without crushing the tender stems, and in a trice there is a bouquet, as someone said last week, "fit for a queen."

Just another word or two. Over the way is the church, a fine structure, with an architectural feature in the form of two transept arches, which are said, on the authority of John Ruskin, to be unique. The sacred edifice is far too large for the comparatively few parishioners, but others come from round-about, including Croydon, and fill it. Just as the venerable florist-vicar, "D., Deal," enjoys the trust and confidence of the people among whom he lives, so it is with the gardener-vicar of Shirley, and both should be, and no doubt are, happy men.

What can be said of the churchyard and its fine monuments? Only that for its size its equal in a rural parish has not been seen by the writer, whose journeyings have not been few or rigidly circumscribed. "God's acre" at Shirley is such a desired resting place, that it is only by the forced institution of very high fees to non-parishioners that it can be kept within anything like the limits of recent enlargements, and would soon extend far over the adjoining green fields. One memorial of the dead can alone be mentioned here, and there is not another like it anywhere. It is in marble, and on it is represented in bold relief a Coleus, a Dracæna, and a small-leaved Caladium. We

have a wealth of all those plants now, and beautiful forms are raised from seed in ordinary routine; but it ought not to be forgotten that the pioneer in their production was Christian Frederick Bause, who died on the 28th of October, 1895, as inscribed on the handsome monument.

As many readers of these lines well know, there is often much that is interesting to be found in, and suggestions to be obtained from, comparatively small gardens, yet it is feared many are passed silently because they are small and nothing else. It is a mistake, and it is certainly not conceivable that any lover of gardening with eyes to see and ears to ear, could be other than gratified, and in some measure instructed by an hour spent in his cherished garden with the very real gardener, whose name will go down to posterity as one of the "great" Secretaries of the Royal Horticultural Society, the Rev. W. Wilks, the popular Vicar of Shirley.

THE MARKET GARDENERS' OUTLOOK IN WORCESTERSHIRE.

TAKING it all in all, a policeman's life is not a happy one, and the same may be said of the market gardener's. Just think for a moment how many things he has to contend with. First of all there is our admirable climate; then, supposing he escapes the heat and the cold, and the frost and the drought, and the rain, and all the rest of it, there are the insect pests, the caterpillars, the red spiders, the aphides, and all sorts of things with names as long as your arm which nobody can pronounce. Supposing, however, the weather and the insects let him off lightly, what happens? Why, just as he is counting on a substantial increase in his balance at the bank, and perhaps spending a bit extra on the strength of it, he finds that the foreigner is cutting him out with things made in Germany, or France, or the Channel Islands, or Tasmania, or somewhere; or that there is depression in trade and he can't sell his "stuff" for half what it ought to fetch. When he does by chance once in a lifetime get a good season—well, we were going to say that the Town Council raises the rates, or there are subscriptions for schools or other ways of making the money fly; but if you believe what he says himself, and surely he ought to know, he never has a good season, so we need not go into that. The gardener is like the farmer—he always has something to grumble about, and if he did not have anything to object to, people would think there was something radically wrong with his internal organs.

So much by way of introduction. This year he is grumbling about the bad spring—and quite justifiably, too, for it has been one of the worst for many years. The weather has been simply—well, simply awful, from a gardener's point of view. After going round among the gardeners, and taking their opinions on things in general, the results of this investigation we now proceed to give.

Spring Onions (autumn sown) are not, perhaps, the pleasantest subject to start with, but as they practically commence the season we will begin with them. Considerable breadths are grown, and they have been a fairly successful crop, and satisfactory prices have been realised. Unfortunately not all the gardeners have had them to put on the market. When we come to Radishes, however, the tale as to success is very different. One of the gardeners said they have been a total failure, and taking an average crop as 100, this year's yield are represented by about twenty-five. Others put the figures somewhat higher, but all are agreed that the frost has done a terrible amount of damage to the Radishes. Some it cut up just as they were coming through. Others it made hollow in the middle and stringy, and so worth very little in the market. Some of the later sown ones had escaped lightly, and are fetching pretty good prices. Round Eckington way, where garden produce is about three weeks later on the average than in the Evesham gardens, we saw some of the best Radishes. Their immunity from frost injury was due to their having been sown later. Probably the Evesham gardeners know their own business best, but it would seem that a great mistake is made in sowing Radishes so early. It is true that if they turn out well good prices are realised, but only too often the crop is more or less a failure. Some of the gardeners are realising this, and going in for later sowing, and we feel sure that this is worth the consideration of the growers generally. Very early Radish growing is a speculation pure and simple, just as buying next year's crop of Asparagus is.

The mention of Asparagus brings us to this very excellent vegetable. The season is very late. Compared with other years little "grass" has been cut. True, one gardener we know of started cutting as early as the 1st of April, and he is far from being an April fool. Another large grower told us that two or three years ago he had at this time cut twelve or fourteen thousand, whereas this year he has only cut as many hundreds. When it does come in it will come with a rush, the season will soon be over, and it is feared that the

prices will be none too high. The lateness of the season is attributable to the cold weather, and not, as some people seem to think, to the blight or whatever it may be called, that has affected the Asparagus the last year or two. This rust which affects the plants, it may be mentioned, caused many growers to have dire misgivings as to the future of the vegetable in this locality, but it is now generally admitted that it was the result of the dry seasons more than anything else.

Some of the gardeners swear by soot for Asparagus, and though it is a very good thing to use, especially on some kinds of land, too much of it is injurious. It is a capital dressing for heavy land, and contains manurial properties in that it possesses a good proportion of ammonia, potash, and sulphate of lime, but care is needed in its use. Another thing that the gardeners should remember is not to keep the beds in cut for too many years. Nowadays careful gardeners do not keep a bed nearly so long as they used to, and though it is an expensive crop to bring out, it will, we think, be found to pay well to plant out fresh beds more frequently than they have been doing. We are not so sure about the benefit to be derived from planting in the now fashionable narrow beds, but the experience of the next few years ought to settle this vexed question one way or the other.

Cabbage are working off better than they were last year. Some of the gardeners have not been so fortunate, however, and describe the Cabbage as a "funny" crop. Some people thought they were going to make a lot of money, bought the crop on speculation before it was fit for market, and burnt their fingers pretty considerably. One thing against the crop was the fact that plants were very difficult to procure last year, and the ground was too dry to plant them, and consequently there are not so many grown this time as is the case some years.—("Evesham Journal.")

ROBERT FORTUNE, PLANT COLLECTOR.

[THE following narrative by Mr. W. J. Gordon, in the long established and altogether excellent serial, the "Leisure Hour," will be perused with interest by many readers of the "Journal of Horticulture."]

We have all heard of what the man deserved who made two blades of grass grow where one grew before, but what shall we say of him who not only introduced the Tea and other plants into India, but brought among us over 200 species and varieties from the Far East, most of which are now so established in our gardens that they seem to have been with us for ages? The man was Robert Fortune—aptly, and inevitably, named the most fortunate of plant collectors—who was born at Kelloe, in Berwickshire, in 1813, and died in the Gilston Road, Brompton, in 1880.

He began as a gardener's apprentice and worked his way up in about a dozen years to be Superintendent of the Indoor Department at the Horticultural Society's Chiswick Gardens; and he was afterwards for a short time Curator of the Apothecaries' Garden at Chelsea. When peace was made with China in 1842, Fortune was sent out as botanical collector by the Horticultural Society. He arrived at Hong Kong in July the next year, after a passage of four months from England, and immediately set to work by sending home *Chirita sinensis*, whose elegant Foxglove lilac flowers he found under the dripping rocks of the island's ravines, where the Ferns and creeping shrubs grew in crowds. On the hills he came across the yellow Orchid *Spathoglottis Fortunei*, which he promptly despatched after the *Chirita*. In August he was off to Amoy, whence "some very pretty Roses producing small double flowers of great neatness and beauty" were collected and sent to Chiswick. From Amoy he went to Chimoo, where he was attacked by the natives, and among the plants which were nearly destroyed in the fight was *Abelia rupestris*, which ultimately arrived safely in England.

His next hunting-ground was the island of Chusan, which he visited again and again. Here he met for the first time the beautiful *Wistaria sinensis* wild on the hills, where it climbs among the hedges and on the trees, its flowering branches hanging in graceful festoons by the sides of the narrow roads that lead over the mountains. The purple variety was already known in England, having been introduced in 1816 from Consequa's garden at Canton; but the white variety, which he afterwards found at Soo-chow and sent home from Shanghai, was new. From Shanghai he also sent home the beautiful *Cryptomeria japonica*, the Japan Cedar, a species of Pine of much the same character as the *Araucarias* of Chile and Norfolk Island, which is now to be found in every nursery, though it has not yet attained the height it does in its native land, where it furnishes the long poles that are generally to be seen in front of the Chinese temples. Another great find at Shanghai was the *Anemone japonica*, which he discovered in full flower amongst the graves of the natives round the ramparts.

To get to Soc-chow, which was not then open to Europeans, he had to disguise himself as a Chinaman, with pigtail complete. It was a dangerous game and nearly ended seriously. He went because the gardeners at Shanghai told him it contained a great many nurseries from which came nearly all the plants they had for sale. This turned out to be untrue, but he succeeded in bringing away the white *Wistaria* already mentioned, a fine new double yellow Rose, and *Gardenia florida Fortunei* with large white blossoms like a *Camellia*.

In the spring of 1844 he was back in Chusan, which he described in his "Wanderings in China" as one of the most beautiful islands in the world.

"In the mornings," he said, "the grass sparkles with dew, the air is cool and refreshing, the birds are singing in every bush, and flowers are hanging in graceful festoons from the trees and hedges. The new plants of the island, some of which I had discovered in the preceding autumn, I now saw in flower for the first time. Early in spring the hillsides were covered with a beautiful *Daphne* with lilac flowers (*Daphne Fortunei*): *Azalea ovata*, certainly one of the finest and most distinct plants of this kind which I have introduced, also grows wild on the hills, and was in full bloom at this period. A fine new *Buddleia* (*B. Lindleyana*) had a most graceful appearance, as its long spikes of purple flowers hung in profusion from the hedges on the hillside, often side by side with the well-known *Glycine* (*Wistaria sinensis*). Another plant, certainly one of the most beautiful shrubs of northern China, the *Weigela rosea* (now *Diervilla rosea*, the Bush Honeysuckle) was first discovered in the garden of a Chinese mandarin near the city of Tinghae on this island. This spring it was loaded with its noble rose coloured flowers, and was the admiration of all who saw it, both English and Chinese."

In January, 1845, he made a short visit to the Philippines with the object of procuring a supply of the beautiful Orchid *Phalænopsis amabilis*, which Cuming had sent home a few years before, but which was still extremely rare in England. Arriving at Manila he started for the Laguna, a large lake in the interior of the island, in the neighbourhood of which was a farmhouse where he stayed as guest. Making an Indian's hut in the wood his headquarters, he held there a sort of market for the purchase of Orchids.

"The Indians," he says, "knew the hour at which I should return to the hut, and on my arrival I generally found the ground in front strewn with Orchids in the state in which they had been cut from the trees, and many of them covered with flowers. The *Phalænopsis*, in particular, was singularly beautiful. I was very anxious to get some large specimens of the plant, and offered a dollar, which was a high sum in an Indian forest, for the largest which should be brought to me. The lover of this beautiful tribe will easily imagine the delight I felt when one day I saw two Indians approaching with a plant of extraordinary size, having ten or twelve branching flower-stalks upon it, and upwards of a hundred flowers in full bloom. 'There,' said they in triumph, 'is not that worth a dollar?' I acknowledged that they were well entitled to the reward, and took immediate possession of my prize."

It is worth noting that for the first example of this Orchid which Cuming had sent home the Duke of Devonshire gave 100 guineas. This huge plant of Fortune's, which reached Chiswick safely, was the largest specimen ever seen in Europe.

Returning to the North of China in the beginning of the spring, he remained there till the end of the summer, travelling between Shanghai, Chusan, Ningpo, and other parts of the interior, visiting them at intervals as the plants came into bloom. In this way a large number of Tree *Pæonies*, *Azaleas*, *Viburnums*, *Daphnes*, *Roses*, and many other plants, all new to Europe and of great beauty, were from time to time added to his collection and shipped to England.

China is not a pleasant place to travel in even now; in those early days it was really dangerous for a European to be found outside the few treaty ports. His difficulties and adventures must remain unrecorded here, with one exception, his encounter with the pirates, which will serve as an example. It was on his voyage from Foo-chow to Chusan, when he was the only European passenger on a native junk. They were about sixty miles from the Min river, when the captain and pilot came down to his cabin to tell him that they saw a number of pirates right ahead, lying in wait for them.

"I ridiculed the idea," he says, "and told them that they imagined every junk they saw to be a pirate; but they still maintained that they were so, and I therefore considered it prudent to be prepared for the worst. I got out of bed, ill and feverish as I was, and carefully examined my firearms, clearing the nipples of my gun and pistols, and putting on fresh caps, and also rammed down a ball upon the top of each charge of shot in my gun, put a pistol in each side pocket, and patiently waited for the result. By the aid of a small pocket telescope I could see as the nearest junk approached that her deck was crowded with men; I then had no longer any doubts regarding her intentions. The pilot, an intelligent old man, now came up to me, and said that he thought resistance was of no use; I might manage to beat off one junk, or even two, but that I had no chance with five of them. Being at that time in no mood to take advice or be dictated to by anyone, I ordered him off to look after his own duty. I knew perfectly well that if we were taken by the pirates I had not the slightest chance of escape; for the first thing they would do would be to knock me on the head and throw me over-

board, as they would deem it dangerous to themselves were I to get away. At the same time I must confess I had little hopes of being able to beat off such a number, and devoutly wished myself anywhere rather than where I was."

"The scene around me," he continues, "was a strange one. The captain, pilot, and one or two native passengers were taking up the boards of the cabin floor, and putting their money and valuables out of sight amongst the ballast. The common sailors, too, had their copper cash to hide; and the whole place was in a state of bustle and confusion. When all their more valuable property was hidden, they began to make some preparations for defence. Baskets of small stones were brought up from the hold and emptied out on the most convenient parts of the deck, and were intended to be used instead of firearms when the pirates came to close quarters. This is a common mode of defence in various parts of China, and is effectual enough when the enemy has only similar weapons to bring against them; but on the coast of Tokien, where we were now, all the pirate junks carried guns, and consequently a whole deckload of stones could be of very little use against them."

The pirate fleet were in a hurry to begin.

"The nearest pirate was now within 200 or 300 yards of us, and, putting her helm down, gave us a broadside from her guns. All was now dismay and consternation on board our junk, and every man ran below except two who were at the helm. I expected every moment that these also would leave their post, and then we should have been an easy prey to the pirates. 'My gun is nearer you than those of the jan-dous,' said I to the two men, 'and if you move from the helm depend upon it I will shoot you!' The poor fellows looked very uncomfortable, but, I suppose, thought they had better stand the fire of the pirates than mine, and kept at their post."

"The shot from the pirates fell considerably short of us, and I was therefore enabled to form an opinion of the range and power of their guns, which was of some use to me. Assistance from our cowardly crew was quite out of the question, for there was not a man among them brave enough to use the stones which had been brought on deck. Again the nearest pirate fired upon us. The shot this time fell just under our stern. I still remained quiet, as I had determined not to fire a single shot until I was quite certain my gun would take effect. The third broadside which followed this came whizzing over our heads and through the sails, without, however, wounding either the men at the helm or myself. The pirates now seemed quite sure of their prize, and came down upon us, hooting and yelling like demons, loading their guns, and evidently determined not to spare their shot. I knew that the next discharge would completely rake our decks. 'Now,' said I to the helmsmen, 'keep your eyes fixed on me, and the moment you see me fall flat on the deck you must do the same, or you will be shot!' I knew that the pirate who was now on our stern could not bring his guns to bear on us without putting his helm down, and bringing his gangway at right angles with our stern, as his guns were fired from the gangway. I therefore kept a sharp eye upon his helmsman, and the moment I saw him putting the helm down I ordered our steersmen to fall flat on their faces behind some wood, and at the same moment did so myself. We had scarcely done so when bang! bang! went their guns, and the shot came whizzing close over us, splintering the wood about us in all directions. Fortunately none of us were struck. 'Now, mandarin, now! they are quite close enough!' cried out my companions, who did not wish to have another broadside like the last. I, being of the same opinion, raised myself above the high stern of our junk, and while the pirates were not more than 20 yards from us, hooting and yelling, I raked their decks fore and aft with shot and ball from my double-barrelled gun. Had a thunderbolt fallen amongst them they could not have been more surprised. Doubtless many were wounded, and probably some killed. At all events, the whole of the crew, not fewer than forty or fifty men, who a moment before crowded the deck, disappeared in a marvellous manner, sheltering themselves behind the bulwarks, or lying flat on their faces. They were so completely taken by surprise that their junk was left without a helmsman; her sails flapped in the wind; and as we were still carrying all sail and keeping on our right course, they were soon left a considerable way astern."

Another junk now bore down, and the same tactics were resorted to, with the result that its helmsman was killed, and it was left with the sails flapping uselessly. Two other junks, when they saw what had happened, prudently forebore to venture nearer, and, the peril being over, up came the heroic crew to hoot and yell at the pirates they had a few minutes before held in such terror. Two days afterwards another pirate fleet appeared on the scene, to be beaten off in a similar way. Yet later on the Chinese crew, to whom gratitude appeared to be unknown, refused to complete their contract by landing Fortune in Chusan, and had to be brought to their senses by being threatened with the contents of the redoubtable double-barrel.

(To be concluded, with a portrait of Mr. Fortune.)

"FAMILIAR WILD FLOWERS."—Numbers 7 and 8 of this admirable publication contain plates of Lady's Smock, Bitter Cress or Cuckoo Flower, Wallflower, Yellow Horned Poppy, Shepherd's Needle, Red Meadow Clover, Anemone, Germander Speedwell, Garlic Mustard or Sauce Alone, Black Bryony, Cross-leaved Heath, Blackthorn, Hound's Tongue, Carrot, Corn Mint, Field Scorpion Grass, Lady's Mantle, Groundsel, Henbit, dwarf Thistle, and Starwort.

DEATH OF MR. MALCOLM DUNN, V.M.H.

ALL gardeners, and many more than gardeners, who enjoyed the friendship of the long and trusted gardener at Dalkeith Palace will mourn his loss most deeply, and their grief will not be the less because of the suddenness of the melancholy event. Apart from his liability to attacks of asthma, Mr. Dunn rarely showed signs of weakness. He was a man of great activity and energy, and with his high spirit was combined a warm heart. He was ever ready to help in whatever way he could the advancement of gardening, and to assist his fellow men. He was a subscriber to almost everything he deemed good in connection with the art he loved, and of which he was acknowledged as one of its most capable exponents.

Our first visit to Dalkeith unfortunately happened in Mr. Dunn's absence, but in response to an inquiry he promptly forwarded to us some particulars as to the extent of the glass department, which had impressed us by its magnitude. Our last intentional visit, a little more than two years ago, was cut short, so to say, on the threshold. On the evening of the appointed day he was summoned by telegraph into Perthshire, on the occasion of the sudden death of his sister, and his end appears to have been similarly unexpected, and equally sudden.

Mr. Dunn, who was a rather ardent politician, attended a Conservative meeting in good health and spirits on Tuesday night, the 9th inst., went home in a pouring rain, caught a chill, and peritonitis set in on Wednesday. He suffered much, the doctor attending him four or five times; death ensuing at half-past twelve on Thursday morning, May 11th. Age, sixty-one. We have thus health, sickness, death, crowded, as it were, into a span, as the subject of these lines was well on Tuesday, seriously ill on Wednesday, dead on Thursday, and buried on Saturday.

Just as we were commencing a brief record of the career of Mr. Dunn a tribute of appreciation arrived from Mr. R. P. Brotherston, and as it contains the chief incidents of his gardening and home life, it is inserted hereunder. Though our portrait (fig. 91) was taken some years ago it represented the deceased as he was to-day, as in appearance he had not aged materially.

The announcement in the Friday papers of the sudden death of the late Malcolm Dunn on Thursday last (May 11th) came as a great shock to the many gardeners who knew him. In physique Mr. Dunn surpassed the majority of men, and no doubt it was largely owing to having been blessed with a constitution of abnormal vigour that he was able to overtake the large amount of work that daily passed through his hands. By those who knew him intimately, a long stretch of years of working life was confidently expected, and indeed all who have lately come in contact with him have been impressed with his abounding vitality. Whether the fact that for a few years past the deceased gentleman thought it prudent to be a little careful in his dietary had any bearing on the acute inflammation of the stomach which after less than a day's excruciating suffering was the terminating cause of so bright a career cannot be said. We only know that a chill was caught either at or after a meeting he attended at Dalkeith on the Tuesday evening, that acute pain developed during the succeeding night, and on Thursday morning Malcolm Dunn was with those who sleep.

The general estimate of his age has proved incorrect, his years having been fewer in number than anybody seems to have guessed. Sixty-five to sixty-eight was the term one heard mentioned; as a fact, he was only sixty-one, but, a hard worker all his life, how much he had been able to crush into that period no one can ever rightly know. It is generally thought that Mr. Dunn was a native of the town of Crieff, in Perthshire; as a matter of fact, he was a native of the parish of Auchterarder.

Though for long years his family has been located at Crieff, he received the elements of education at the parish school, an institution that was devoted to teaching, as opposed to the cramming My Lords have seen fit to substitute. His gardening career commenced in Strathallan Gardens, where he served his apprenticeship. While there he botanised the district, and sometimes during the summer months passed the night out of doors in his eagerness to traverse as much ground as possible.

In 1859 he was in the gardens of Sprotsboro' Hall, Yorks, whence he passed to Trentham, and while there worked in the vineries. At this time the famous discussion on the identity of a certain Grape caused him to take a greater interest than he otherwise might have done in the large collection of varieties of Grapes then cultivated there. In 1861, at the early age of twenty-three years, he had charge of a garden and large orchard in Worcestershire, and there studied cider making, and obtained some curious information concerning the manufacture of "champagne," the details of which he was not averse to relate at the fireside of his friends.

Two years later the appointment to Powerscourt was received, and whilst there Mr. Dunn first became known through his successful treatment of Vines attacked by *Phylloxera vastatrix*. The whole of the roots of the Vines in four vineries were lifted, picked free of soil, then washed and laid back in the same material after it had been treated to a dressing of caustic lime and soot. Both the Thomsons commented favourably on the exploit, David in the "Gardener," and in "Fruit Culture Under Glass;" and William in the eighth edition of "The Grape Vine," and there is little doubt his appointment to Dalkeith Gardens, on the retirement of the latter in 1871, was largely due to the prompt and daring method he adopted in this case.

From sheer force of character, combined with untiring energy and a capacity for working hard, Malcolm Dunn gradually came to occupy a unique position among British gardeners. If he once took a matter in hand he stuck to it with dogged persistence, and, though no doubt unconsciously—for those who knew him best know how modest his real character was—he never seemed satisfied unless leading others. The various congresses at Chiswick and at Edinburgh owed much of their success to Mr. Dunn's hard work and push.

The reports on Apples, Pears, and Plums exhibited at the Edinburgh Congresses were written by him. The Forestry Exhibition at Edinburgh was also greatly benefited by his energy, and, indeed, in all matters relating to forestry he was looked upon as an authority as competent as he was in pomology and gardening generally. He was also a life member of the Highland and Agricultural Society, and was the only gardener whom the Directors of that



FIG. 91.—MR. MALCOLM DUNN, V.M.H.

Society have ever allowed the privilege of compounding for a life interest. His connection with the Royal Caledonian and the Scottish Horticultural Societies is well known, and it was only a few weeks since the latter Society conferred an honorary membership on its first President. He has been the recipient of the Veitch Memorial medal, of the Niel prize in horticulture, and was one of the sixty chosen as a Victoria Medallist of Honour, and of which body he is the first to pass away. About Mr. Dunn's qualifications or right to the latter position there was no doubt whatever among Scotsmen, and he himself was not a little proud of the distinction.

In estimating Mr. Dunn's position as a great gardener it is impossible to help contrasting him with his immediate predecessor, and perhaps also with Macintosh, and in gardening pure and simple it will perhaps be the general verdict that he did not reach the level of either. But the subject of our notice had difficulties to contend with of which they knew nothing. Both had unlimited means at command, while during almost the whole period of Mr. Dunn's operations the ducal estates were suffering from want of funds, and it is only lately they have regained a pleasant equilibrium in that respect. A re-arrangement of heating, and the substitution for a number of antiquated boilers three of the most modern type has been one result, and a long deferred wish of Mr. Dunn's was thus gratified only a few months ago. Many of the glass structures were equally out of date, and those only who have had dealings with worn out houses can appreciate the difficulties attending their management. Flower gardening in particular suffered, and one of the wonderful things about Dalkeith was how its chief managed to keep up to date with flowers.

His position as a hardy fruit grower calls for no comment, his knowledge on the subject having been almost encyclopædic. It was, I may venture to say, his hobby. His knowledge of trees was also most extensive, and a few years ago he took up hardy shrubs, adding year by year to the collection at Dalkeith any good thing he learned of. Pine Apples, I may add, were particularly well grown during all Mr. Dunn's time.

It is in broad and accurate knowledge of the subjects in which he was interested, some of these outside horticulture altogether, that we undoubtedly find the cause of Mr. Dunn's greatness. He was widely read, and possessed a large and well selected library of works on gardening,

forestry, and agriculture. Among the books upon which he placed the greatest value were Loudon's various works on forestry and horticulture, a complete set of "The Scottish Gardener" and "Gardener," and the copy of Hogg's "Herefordshire Pomona," which he chose when presented with the Niel prize. If I am not mistaken the oldest book in the library is a 4 vol. copy of Martyn's Ed. of "Miller's Gardeners' Dictionary," the purchasing of which in Dublin, and the regret of the street vendor who sold it that he had not asked for a bigger price, Mr. Dunn used to relate with much humour.

He early contracted a habit of note-taking, and it is a remarkable fact that the schedules of all the more particular shows at which he had acted as judge since 1861 have been preserved, and the points he made for his own assurance are figured on the margins. It has all along been his practice to decide no important prize without pointing. Then he was continually going about the country visiting estates, and by this means alone he gained a unique kind of knowledge with the outcome; as I heard a leading florist say lately, "To be acquainted with Dunn was of itself an education."

He was very largely consulted on matters connected with forestry, and one of his boldest experiments was the lifting a good part of an avenue of blown Lime trees at Duns Castle in 1880. The details of the work were entrusted to the late Mr. Alexander Shearer, long gardener at Yester, and an old *Journal* man, and with a success that has fully justified Dunn's advice. Mr. Dunn was for many years the organiser of the summer excursions of the Scottish Arboricultural Society, and it has occurred that the less vigorous of the members have found it impossible to keep up to the programme, drawn up for their benefit, no doubt, but beyond their physical powers to accomplish.

As a lecturer Mr. Dunn had more applications to speak than he would accept. He spoke very rapidly, most instructively, but perhaps tried to convey more to his hearers than they were able to lay hold of at one sitting. He generally spoke at all meetings, and when it occurred, as it sometimes did, that someone possessed of as decided opinions as himself expressed them with an equal confidence, there was for a brief space a slight display of irascibility, which, however, immediately passed off, leaving behind no afterthought or ill-feeling. This intensity of feeling led Mr. Dunn, as a Conservative, to take a very decided stand when Gladstone fought the Midlothian campaign against the present Duke of Buccleuch, at that time Earl of Dalkeith.

I cannot close this brief and very imperfect sketch without adding something, however slight, about Malcolm Dunn as a man. Though his beautiful relations towards the members of his family are well known, it would be in this place impertinent to do more than allude to them. With regard to others it is different. He was the kindest friend, and put himself as much out of the way to do a favour to a young journeyman gardener as he would to men established in high place.

He gave liberally of his means to all deserving objects, and I am told by Mr. Todd that the only gardener who continued to send plants to his annual Orphan Bazaar was Mr. Dunn. I do not know anyone who replied quicker to a letter than he, and from the nature of the case some of these replies must have been written when most people would have been asleep in bed. I suppose everybody that has visited Dalkeith knows his hospitality, and it is a place that someone or other was continually turning up at, almost the latest visitor having been Canon Ellacombe. He was extremely simple in his tastes, always wore clothes of the same cut and colour, and, if I am not mistaken, he had an aversion to kid gloves! Though a bachelor, Mr. Dunn was fond of family life, and enjoyed a romp with children. Few will mourn his loss more than the women of the households he visited, his deference to women being very great. He was for a long number of years an elder in Dalkeith Church.

The obsequies took place on Saturday afternoon, the remains being laid in Dalkeith Cemetery. A large number of gardeners and others were present, but owing to the awkwardness of the day, and the short time people had to make ready, not a few must have been debarred the mournful satisfaction of paying their last respects to the dead. The remains were contained in an oak coffin, on which was a brass plate, inscribed with the simple words—"MALCOLM DUNN. Died 11th May, 1899. Aged 61 years."

Some lovely floral tributes covered the coffin, but nothing so lovely or so touching on so sad an occasion as the orchard garden on the bank of the Esk, glorious in its display of flowering Pear trees and Damson Plums.—R. P. BROTHERSTON.

BRITISH Horticulture has sustained a great loss by the death of Malcolm Dunn of Dalkeith. Gardeners in all parts of the United Kingdom will hear with keen regret that this skilful, energetic, and genial Scotsman has gone over to the great majority. Devoted to his calling, and eager to

advance its interests in every legitimate way, he was to the fore in all worthy projects, conferences, exhibitions, experiments, and charities; all claimed his attention, his aid, and his energy. Well might Mr. William Carmichael say, in a recent letter, "Mr. Dunn is a most useful man."

Many years have elapsed since I first made the acquaintance of Mr. Dunn, and upon the subject which was nearest to his heart—hardy fruit culture—we have corresponded frequently. Within the past few weeks I had an interesting letter from him, partly in reply to some questions I had addressed to him on Strawberry culture in Scotland. It so well indicates the kindly appreciative character of the man, and the bent of his mind as a horticulturist, that I have transcribed it.

"Please to accept my best thanks for the copy you have kindly sent me of your excellent paper on 'Orchards.' I have just read it through this evening, and find it full of the latest and best information on the subject. It is seldom so much sound advice is found in so small a space. I trust you receive encouragement to carry on your good work among hardy fruits. Strawberries for market are grown to a considerable extent in this district (the Lothians), chiefly around Dalkeith, Prestonpans, and East Linton, but the supply seldom goes further afield than Edinburgh and the district. The great centres of Strawberry growing are in Clydesdale, near Lanark, in the Blairgowrie district of Perthshire, and in the lower Dee and Don districts in Aberdeenshire. There is no good work that can be relied upon, but a lot of desultory writing and rough (often very rough) statistics have appeared in local papers. The history of the Strawberry enterprise in Scotland requires to be written by a person familiar with what he is looking at and recording. As you know, a lot of salt has to be taken with the statements of interested parties and those who give information so freely about matters on which they are ignorant. Artificial manures are not popular among the Strawberry growers, who use little else than 'farmyard' when they can get it. Fertilisers of all kinds have been tried, and generally condemned for one reason or another. On light soils they are said to burn the plants, and on heavy to make them grow foliage, but no fruit. My own experience with artificials is they are useful when you have abundance of moisture to apply with them on light soils; and on strong, marly soil, in which the Strawberry delights, they are of little use, and may do harm on a three-year course. I do not include bones in artificials; they are good but costly for a Strawberry crop.—With best regards, I am yours faithfully, MALCOLM DUNN."

His letters were always brimful of information or suggestions, and the foregoing is given because it must have been one of the last penned by our friend, and because it leaves a task as a legacy to some able horticulturist in Scotland, which I venture to hope will be carried into execution—namely, a record of Strawberry culture in the North.—R. LEWIS CASTLE.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL—MAY 16TH.

THE display at the Drill Hall, on Tuesday, was a most interesting one, and was decidedly superior to what was expected by many growers, who were of the opinion that the forthcoming Temple Show would prejudice it. This, to a certain extent, proved to be the case, as Orchids were not numerous; but the exhibits brought for the inspection of the Floral Committee were both extensive and diversified. Fruits and vegetables were not very largely represented.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs J. Cheal, W. Poupert, A. F. Barron, A. H. Pearson, J. Wright, A. Dean, S. Mortimer, J. W. Bates, G. Wythes, F. Q. Lane, H. Balderson, J. Smith, G. Miles, G. Norman, R. Fife, and M. Gleeson.

THE LATE MR. MALCOLM DUNN.—Immediately after the reading of the minutes of the last meeting the Rev. W. Wilks rose, all the members present uncovering, and spoke in terms of the deepest regret of the death of one of the members of the Committee, Mr. Malcolm Dunn. The rev. gentleman said the loss of such an active energetic helper to the advancement of horticulture in Scotland must be most keenly felt; while his advice and assistance so freely rendered in movements in which the south was immediately interested were warmly appreciated, and the death of their friend was sincerely deplored. Mr. Wilks concluded by proposing that the following resolution be entered on the minutes. The proposal was seconded by Mr. J. Wright, and passed by the silent assent of the whole of the members. "The Fruit Committee of the R.H.S. have heard with great regret of the sudden death of Mr. M. Dunn, for many years a member of this Committee. Whilst recording the great loss they themselves feel, they also desire to express their deepest sympathy to the immediate friends of Mr. Dunn."

Messrs. T. Rivers & Son, Sawbridgeworth, sent a good box of Cardinal Nectarines, grown from trees in pots, started December 23rd last; the fruits were splendid and well coloured. Mr. E. Beckett, gardener to Lord Aldenham, sent an exhibit of Carter's New Forcing Turnip, which appeared to be in good form; the roots were white and crisp. A trial of this Jersey Navet type of long white Turnips is to be made at Chiswick.

Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, exhibited a large dish of Royal Sovereign Strawberry, and a dish of Apples called Keddestone Pippin, but it was decided to be the French Crab.

Mr. Alfred Bishop, Market Harborough, exhibited some excellent specimens of Monarch Strawberry, which were grown in 5-inch pots, also a good dish of Leader, which clearly demonstrated that both these varieties can be grown in pots. Mr. J. Hudson, gardener to L. de Rothschild, Esq., Acton, exhibited three pots of Cherries, Guigne d'Annonay, a black variety, fruits quite ripe.

Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, exhibited boxes of Tomato Hepper's Goliath, also bunches of fruit to illustrate its free-cropping qualities. The fruits were very fine, and the bunches exhibited were carrying from fifteen to twenty fruits. The same exhibitor also sent a box of Royal Sovereign Strawberry, which were unusually large and brightly coloured.

REPORT OF SUB-COMMITTEE ON MEASURES FOR FRUITS.—At the meeting of the Committee held on May 2nd a letter from the Customs authorities referring to weights and measures for fruits was read, and we now give the report of the Sub-Committee that was appointed to go into the matter. "Considering the fact that all fruits, and even varieties of the same fruit, differ considerably in their weight per bushel, we consider the quotation of imported fruit by measure altogether misleading. We are very strongly of opinion that all importations of fruit should be recorded by weight and not by measure at all. The best weight to use in this country is the ton of 2240 lbs., not the cubic ton.—(Signed) PH. CROWLEY, JAMES WALKER, WM. POUPART, GEO. MONRO, GEORGE BUNYARD."

FLORAL COMMITTEE.—Present: Chas. E. Shea, Esq. (in the chair); with Messrs. J. Fraser, C. T. Drury, H. B. May, R. Dean, J. Jennings, Jas. Hudson, J. F. McLeod, C. J. Salter, J. Fraser, Jas. Walker, J. W. Barr, J. D. Pawle, G. Gordon, E. H. Jenkins, D. B. Crane, H. J. Cutbush, E. Beckett, E. T. Cook, H. J. Jones, H. Turner, George Paul, H. Self Leonard, G. Nicholson, and Ed. Mawley.

Messrs. Jas. Veitch & Sons, Chelsea, staged a bright and attractive collection of cut flowers. The Parrot Tulips, such as Constantinople, Feu Brilliant, and Mark Graaf were very notable, as were also the species Tulipa cornuta, Gesneriana, Isabella, American Lac, Velvet Gem, and Summer Beauty. The Ixias and Tritonias were also bright. The pots of Clintonia pulchella, Schizopetalon Walkeri, Linarias, Lathenias, and Nycteria selaginoides, take us back thirty or forty years ago. The group was tastefully filled in with Adiantums and Pterises; also a group of Richardia Elliottiana in excellent condition, with plants of Pæonia arborea Elizabeth (silver Flora medal).

Messrs. R. & G. Cuthbert, Southgate, staged a collection of Azaleas consisting of Azalea mollis hybrids, also the Ghent forms, with foliage plants and Ferns. Chief amongst the Azaleas were Chevalier de Reali, Glory of Boskoop, Apellus, Ariadne, Hortulanus Witte, and Virgile (silver Flora medal). Messrs. G. Jackman & Son, Woking, contributed a display of flowering shrubs and herbaceous plants. The Trollius in variety were bright, as were also the Geums. Phlox canadensis with its pale blue flowers, and P. setacea compacta were also noteworthy; Cytisus præcox and the white form were effective. Magnolia Soulangeana was also staged in good form (bronze Banksian medal).

Mr. Chas. Turner, Slough, exhibited a group of Malmaison Carnation Princess May in capital condition edged with Maidenhair Fern (bronze Banksian medal). Messrs. Kelway, Langport, showed a collection of Pæonies in great variety. The best forms were Elizabeth, a salmon pink of good form; Jean de Reszke, a giant single white; Snowy Coles, The Mikado, Don Quixote, and Julius Cæsar (bronze Flora medal). Mr. Jas. Hudson, Gunnersbury House, exhibited some excellent plants of Heliotrope in 5 inch pots. Chameleon, a medium colour; Picciola, a dark form; and Madame Fillay, a light colour with a dwarf habit, were the varieties shown; all were first-rate forms for greenhouse decoration.

Mr. T. S. Ware, Ltd., Tottenham, exhibited a group of spring flowers, chief of which were Azalea mollis in variety, a number of late Narcissi, Geums, Primula Sieboldi in variety, Alpine Auriculas, and a collection of rock and alpine plants completed the exhibit (silver Banksian medal). Messrs. G. Paul & Son, Cheshunt, sent a large collection of herbaceous and alpine plants, such as Tiarella cordifolia, Geums in variety, Iberis gibraltarica, Iris tingitana, Phlox canadensis, and some very pretty Saxifragas. Some flowering shrubs formed a good background. The new Rambler Rose Psycho was also well displayed (silver Banksian medal).

Messrs. Barr & Sons, Covent Garden, occupied one side of the hall with an exhibit of Darwin Tulips, Narcissi, and a variety of herbaceous and alpine plants. The chief Tulips were Joseph Chamberlain, a bright crimson variety; Loveliness, a well formed rose; Hecla, a dark crimson of excellent character; Charles Dickens, Dorothy, Purple King, Glow, Cordelia, The Sultan, May Queen, and Queen of Roses in the Darwin section. The Parrot forms were in great variety, while the Primula Sieboldi in variety, Primula Auricula Celtic King, a good yellow form; Pæonies in variety, Trollius japonica fl.-plena, and Euphorbia pilosa major contributed to the display (silver Flora medal).

Mr. F. D. Godman, South Lodge, Fareham, staged some very fine specimens of hybrid Rhododendrons and Irises. The specimen of Rhododendron Aucklandi hybrid, a greenhouse form, was truly grand; the heads were huge, and pure white in colour. A red form, called Luscombe's Hybrid, a cross between Thomsoni × Fortunei, was also conspicuous. R. Nuttali and R. campylocarpum, with pale sulphur coloured flowers came from the open air. The Irises were Susiana, a fine specimen and Atrofusca (bronze Banksian medal).

Messrs. William Paul & Son, Waltham Cross, exhibited a large collection of pot Roses, also several boxes of cut flowers. The former section included excellent examples of Enchantress, a well-known Tea form, Gustav Piganeau, Emperor, La France, Violette Bouyer (in fine form),

Victor Verdier, Mad. Moreau, William Warden, Grace Darling, Corinna, and Lord Bacon. The boxes contained good examples of Sunset, La France, Souvenir du President Carnot, Princess of Wales, Clara Watson, Souvenir de Madame Eugène Verdier, Elie Morel, Empress Alexandra of Russia, Medea, Mad. Pernet Ducher, and Sappho (silver Flora medal).

Messrs. Hogg & Robertson, Dublin, staged a large collection of Darwin, Parrot, and Tulip species; the blooms were large, well coloured, and in capital condition. In the Darwin section Dr. Wagner, Donders, Theodor Jorison, Professor Balfour, Auber, Emanuel Sweerts, Mr. G. F. Wilson, Marie Edgeworth, and Laurentia were very fine. The species were well represented, and included T. Billetiana, Sunset, T. Jaune Pure, Fairy Queen, T. elegans alba, T. buenaventura, T. viridiflora, Chameleon, and Bridesmaid. The Parrot varieties were very bright and attractive, the whole comprising a very interesting exhibit (silver-gilt Flora medal).

Messrs. Wm. Cutbush & Son, Highgate, again exhibited a pretty collection of Azaleas, comprising chiefly *Azalea mollis* seedlings in good variety, also several of the double Ghent varieties, such as Iltasso, Freya, Ribiera, and Praxitele; the exhibit was well arranged with Palms and Ferns, and edged with *Isolepis gracilis* (silver Banksian medal). Mr. H. B. May, Upper Edmonton, contributed an interesting collection of thirty-six species and varieties of *Gymnogrammas*, beautifully displayed in a bed of *Isolepis*; also a yellow *Tropæolum* called Sunlight, very pure and attractive in colour, together with a few well-flowered plants of *Ivy Pelargonium Galilee*, a well-known pink form (silver Banksian medal).

Mr. G. W. Piper, Uckfield, again exhibited some excellent specimens of his new Rose Sunrise, a variety that will certainly become popular. From the Royal Gardens, Kew, came some very interesting exhibits of *Lathyrus splendens*, *Pride of California*, a beautiful form; also *Clianthus Dampieri*, with its bright flowers, and the exquisite *Amherstia nobilis*. Mr. C. Blick, gardener to Martin Smith, Esq., Hayes Common, sent a new Carnation, *Lady Hermione*, a rosy salmon form, very clear in colour, and of good type.

ORCHID COMMITTEE.—Present: Harry J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, H. M. Pollett, F. Sander, H. J. Chapman, J. Gabriel, W. H. Young, F. J. Thorne, E. Hill, H. T. Pitt, J. Colman, A. H. Smee, T. Mason, S. Courtauld, and T. B. Haywood.

The only exhibit of Orchids that was of any particular extent was that arranged by Messrs. J. Veitch & Sons, Ltd., Chelsea. This formed one of the richest displays that has been staged in the Hall of late, and comprised quantity with excellence of quality. There were splendidly flowered plants of *Dendrobiums Bensoniæ*, *subclausum*, *thyrsiflorum* and *suavisimum*, *Odontoglossums crispum* in variety, and *odoratum*; *Lælias Latona cinnabarina*, and *purpurata*; *Lælio-Cattleyas ascania*, *Pallas*, *Wellsiana albida*, and *Zephyra*; *Cattleyas intermedia*, *Lawrenceana*, *Mendeli*, and *Mossiæ*; *Oncidiums concolor*, *sarcodes*, *phymatochilum* and *ampliatum*; *Epidendrums elegantulum*, *xanthinum*, *O'Brienianum*, and *elegantulum luteum*; *Epi-Cattleya Bowringiana*, *Trichopilia suavis alba*, *Masdevallias Heathi* and *igneæ*, *Epiphronitis Veitchi*, with *Chysis langleyensis*, *Cypripediums*, *Cymbidium*s, and others in variety. Of exceptional interest was a plant of *Cypripedium macrochilum grande*, carrying three flowers, one of which had two dorsal sepals, three long tails, and a fine pouch (silver Flora medal).

Mr. W. King, gardener to J. Colman, Esq., Gatton Park, Reigate, staged an effective though small group of Orchids, including *Odontoglossum polyanthum* Gatton Park variety, with *Cattleya Lawrenceana*, several forms of *Odontoglossum crispum*, *Lycaste Skinneri*, *Lælia purpurata*, and others (silver Banksian medal). Messrs. Hugh Low & Co., Bush Hill Park, contributed *Odontoglossum excellens enfieldense* and *O. Andersonianum giganteum*. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, staged *Odontoglossum crispum Purity* and *Masdevallia Veitchi grandiflora*. de Barri Crawshay, Esq., Rosefield, Sevenoaks, was represented by one plant only, a beautifully round form of *crispum* named Raymond Crawshay. *Cattleya nobilia* Walker's variety, was sent by Mr. G. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill.

Five plants only were shown by Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, but each of these was of superb quality. There were four *Odontoglossums*, including *Andersonianum*, The Dell variety; *triumphans*, a grand form; *Coradinei mirabile* (of exceptional merit), and *luteo-purpureum*, The Dell variety. There were also *Dendrobium sanguineum*, and two flowers of *Lælio-Cattleya Digbyana Mossiæ* (silver Flora medal). Mr. W. Murray, gardener to N. C. Cookson, Esq., Wylam-on-Tyne, showed *Phaius Phœbe*.

CERTIFICATES AND AWARDS OF MERIT.

Cerasus pseudo-Cerasus James H. Veitch (J. Veitch & Sons).—A very floriferous variety with flowers of large size, and a particularly pleasing shade of rose (first-class certificate).

Lathyrus splendens Pride of California (Royal Gardens, Kew).—A very handsome variety. The flowers are large and of a rich dark crimson maroon shade (award of merit).

Odontoglossum Coradinei mirabile (H. Ballantyne).—A remarkable form. The broad, slightly fringed petals, have a large central blotch of light chocolate, with one or two spots of similar colour. The lip and sepals are similarly marked, but the colouring extends almost over the whole surface (first-class certificate).

Odontoglossum luteo-purpureum The Dell variety (H. Ballantyne).—This is one of the richest forms we have seen of late. The form, colour, and markings are superb (award of merit).

Odontoglossum crispum Raymond Crawshay (de Barri Crawshay).—In form this is one of the most attractive varieties of *crispum* that has been shown. The colour is white clouded with rose purple, and with large chocolate blotches (award of merit).

Odontoglossum crispum Purity (C. J. Salter).—Save for the slightest rose flushings in the sepals and the yellow at the base of the lip this is pure white. It is a beautifully fringed flower (award of merit).

Odontoglossum Andersonianum giganteum (H. Low & Co.).—Both for size and colouration this is of excellence (award of merit).

Odontoglossum polyanthum, Gatton Park variety (W. King).—A very good variety of a well-known and popular type (award of merit).

Phaius Phœbe (W. Murray).—This is a hybrid resulting from a cross between *P. Sanderianus* and *P. Humbloti*. It is a superb Orchid. The sepals and petals are pale cinnamon yellow, with rose shading to white at the margin. The large open lip is rose, with deeper veins on the front lobe, with bright yellow and crimson in the throat and on the side lobes (first-class certificate).

ROYAL BOTANIC SOCIETY.

MAY 17TH.

THE summer Exhibition, held at Regent's Park, was a decided improvement on the former show. The competition was poor, but the trade exhibits made a capital exhibition.

There were two competitors in the class for a group of Orchids and foliage plants, Mr. Geo. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill, was deservedly placed first with a superb group, consisting chiefly of *Cattleyas Mendeli*, *Skinneri*, and *aurea*, *Dendrobium nobile*, *Odontoglossums*, *Oncidiums*, *Cypripediums*, arranged with *Crotons*, *Palms*, *Dracænas*, and small Ferns. Mr. J. D. Clarke, gardener to L. Mond, Esq., Avenue Road, was second with a group in which the *Cattleyas*, *Lycaste Deppei*, *Miltonias*, and *Cymbidium*s were the chief features.

Mr. G. Kelf, gardener to Mrs. Abbot, South Villa, Regent's Park, came first with six specimen Palms; the plants, though small, were very clean and well grown; and Mr. Thomas Abbot, gardener to C. Newington, Esq., The Holme, Regent's Park, was placed second. Mr. G. Kelf was first for a pair of *Dracænas*. Mr. Thomas Abbot second with two plants of *D. Guilfoylei*. For twenty-four bunches of stove and greenhouse flowers, Messrs. A. W. Young & Co., Stevenage, were the only exhibitor, and received second prize.

Mr. Chas. Turner, Slough, exhibited a group of the well known *Malmaison* Carnation *Princess May*, a very free flowering red variety. Messrs. Kelway & Sons, Langport, exhibited a collection of *Pæonies*, including such varieties as Henry Irving; Elizabeth, a beautiful form; Don Quixote, a good pink, of large size; Countess Crewe, a pale flesh; Mrs. Joseph Hulton, a charming variety; Countess Cadogan, Maud Wild, Alchemist, and Julius Caesar.

Messrs. Wm. Paul & Son, Waltham Cross, had a group of pot Roses, comprising standards and trained specimens, edged with fine boxes of cut blooms. The beautiful Tea Enchantress formed the chief feature; Madame Fanny de Forest, *Violette Bouyer*, *Gustav Piganeau*, *Le France*, *Grace Darling*, and *Corinna* were very conspicuous. The boxes contained good blooms of *Clara Watson*, *Princess of Wales*, *Souvenir de Madame Eugène Verdier*, *Mlle. Thérèse Levet*, *White Lady*, and *Medea*. Messrs. R. & G. Cuthbert, Southgate, exhibited a bright group of Azaleas, consisting of some bright seedlings of *A. mollis*, and some *A. rustica*, in such varieties as *Bartholo Lazari*, *Praxitele*, *Apelius*, *Virginale*, *Aida*, and *Phœbe*, arranged in a groundwork of Ferns.

Messrs. J. Peed & Sons, Norwood, staged one of the best features of the show in a group of choice *Caladiums*; the plants were very bright and well developed, the whole arranged in a groundwork of Maidenhair Ferns, *Caladium argyrites*, and *Panicum*. The best specimens were *Charlemagne*, *Madame Marchand*, *Oriflamme*, Mrs. Harry Veitch, Mrs. J. Peed, *Reine de Danmark*, *John Laing*, *Lillie Burke*, and *Candidum*. Messrs. T. Rivers & Son, Sawbridgeworth, exhibited nine trees in pots of their new *Nectarine Cardinal*; the trees were well furnished with fruit, of a good size and exceptional colour.

Messrs. Barr & Sons, Covent Garden, made a large exhibit of Darwin Tulips, which were very effective. The varieties, *May Queen*, *Hecla*, *Joseph Chamberlain*, *Phyllis*, *Queen of Roses*, *The Sultan*, *Dorothy*, *Glow*, *Perfection*, *Loveliness*, *Queen of Brilliants*, *Carminia*, and *Petrus Hondius* were most noteworthy. The exhibit was made up of a collection of herbaceous plants in great variety.

Mr. W. Rumsey, Waltham Cross, exhibited eleven boxes of cut Roses, also a number of bunches. The best were, *Victor Verdier*, *Duchess of Albany*, *Alfred Colomb*, *Maréchal Niel*, *Ulrich Brunner*, *Niphetos*, Mrs. Rumsey, in good form, *Crimson Rambler*, and *Mad. Charles*.

Messrs. J. Laing & Sons, Forest Hill, staged a large group of flowering and foliage plants, chiefly of a decorative character, such as *Liliums*, *Ixoras*, *Azaleas*, *Palms*, *Crotons*, *Dracænas*, and Ferns.

HEREFORDSHIRE CIDER AND PERRY.—We find from some trade literature to hand from Withington, Hereford, that in consequence of the large demand for these wholesome beverages the business of Mr. John Watkins has been formed into a limited liability company, with Mr. Watkins as managing director, who will take the same active interest in this department as heretofore.

THE YOUNG GARDENERS' DOMAIN.

THE TUBEROUS-ROOTED BEGONIA.

THE tuberous Begonia is amongst the most useful plants that are grown either for pot culture or bedding during the summer months; they are plants that can be easily grown, although careful attention is required in the young stage. Propagation may be effected either by division of the old tubers or from seeds. In the latter case the seeds should be sown early in March in clean, well drained shallow pans, using a compost of equal parts of fine loam, leaf mould, peat, and sand, making it fairly firm and giving a thorough watering before sowing; when drained sow the seeds thinly over the surface, and lightly sprinkle a little silver sand over them; cover the pan with a clean piece of glass and place it in a temperature of 65° to 70° at night, 70° to 75° by day.

As soon as the seedlings appear above the surface, the glass must be removed from the seed pan, but they will require a light shading during bright days. When the seedlings are large enough to handle they should be placed in boxes about an inch apart, using a similar compost to that for the seeds. Apply water and afford the same temperature, shading when the weather is bright. When the plantlets have made a good start, and the roots have hold of the soil, remove them to a cooler house, keeping them near the glass, and when they are almost touching one another in the boxes carefully take them out with as much root attached as possible, and place in small 60-pots in a compost of equal parts of loam and leaf mould, with a small amount of sand and broken charcoal. When potted apply water, and afford a temperature of about 60° at night, also shade from bright sunshine.

The plants at this stage will grow rapidly, and when they have a fair amount of roots round the sides of the pots again remove them to a cooler place, such as a frame kept at about 50° at night. A little later the best of the plants may be again repotted into small 48's, with a compost of three parts of loam, and two parts of leaf mould, and a little sand and broken charcoal. The potting should be done fairly firm, covering the tubers about half, and it will be found necessary to tie the tallest plants to a neat stake, as they are liable to break when moved about; give the plants a good watering, but after only apply it when needed. During very hot weather when the plants are in bloom it will be necessary to lightly shade them to induce the flowers to last for a longer period.

A very suitable time for starting old tubers is about the middle of February. Lay them in boxes of cocoa-nut fibre refuse and afford a temperature of 60° to 65° at night, 65° to 70° by day. When they have made a start, they should be carefully taken out and placed into well drained pots, the compost to consist of three parts of loam, two parts of leaf mould, with a little sand and broken charcoal, after which afford them the same temperature as before. When some good roots have been formed remove to a cooler house to encourage strong, sturdy growth. Before the plants fill the pots with roots repot, a little of Thomson's Vine manure mixed with the soil for this potting being beneficial. The watering should always be carefully done, only applying it when needed, and as the plants gain vigour, a little liquid manure may be given occasionally.

For outdoor planting the beds should be deeply dug and have abundance of leaf mould added to them. The planting must be done when all fear of frost is gone, and in very hot weather if the beds are covered with some light material the flowers will last for a longer period. After the plants are cut down with the frost the tubers should be carefully lifted and placed in boxes in cocoa-nut fibre refuse to become thoroughly ripened, keeping them in a cool place.—P. R.

WELTON HOUSE GARDENS.

THE above gardens are in Yorkshire, a few miles from Brough, and they form a splendid addition to the country residence of Harrison Broadley, Esq. Mr. C. Lawton is the well-known gardener, and he has a reputation for the production of specimen plants that many might envy, and of these I propose to say a few words.

After a cordial reception we make our way to a span-roofed house of two divisions. In the first are some Orchids, all of which look the picture of health, and in the second are miscellaneous plants, chiefly for table decoration. In the stove, which has a central and side stages, are excellent specimens of Crotons of several varieties. I was much impressed by the size and colour of these plants. Notwithstanding the unfavourable weather we have experienced of late, the foliage was exceptionally large and healthy, and the colours well developed. It may be added that they were free from insect pests, which reflects credit on all concerned in their management. On the side stages were Crotons, grown on the single stem system.

The Palm house contains several Kentias, which with the other occupants of the house were of exceptionally good quality. After passing a general flowering house in which we noticed several varieties of Cycads we reached what I considered the glory of Welton House—namely, the Ericas. Here are to be found some handsome specimens of Cavendishiana and other species. Mr. Lawton considers firm potting and careful watering essential.

In a north house were Carnations of the Malmaison type, and considering the disadvantage of their position, the plants were looking wonderfully well. Another house contained some healthy Eucharises, and I must not omit to mention the Ouvirandra fenestralis (the Lattice Plant of Madagascar) as one of the most unique plants under cultivation. The leaves are simply a vegetable network, the threads of which are so open as to give the leaf the appearance of a piece of wire netting. The plant at Welton is growing in a bed of loam submerged in water, which

also covers the whole of the foliage, the temperature of the house being about 70°. Fresh rain water is added every morning with a rosed can, and the water is poured in at a distance of 2 feet above the plant, so as to carry with it the atmospheric elements which are essential.

We observed heavy crops of Cucumbers, while Melons were swelling excellently. Peaches and Vines were full of promise, and will eventually supply abundance of fruits. Strawberries were fine, the variety being Royal Sovereign, of which several plants were bearing from twelve to fifteen berries.

Adjoining the mansion is a spacious conservatory with specimens of Camellias, Tree Ferns, Dracenas, and Araucarias, and having the roof effectively covered with creepers and Roses. A word of thanks must be accorded to Mr. Lawton for the cultural hints he so readily imparted, and which will be both interesting and beneficial to my companions and myself.—J. F. D., Yorks.

[Our correspondent in his venture in describing Welton House Gardens has not been able to do them justice, and his manuscript has had to undergo a considerable amount of revision. Practical lessons or useful suggestions should be embodied in descriptive matter, and this cannot be well done within the prescribed limits of the "Y. G. D." of about 500 words.]



FRUIT FORCING.

Vines.—*Early Forced Houses.*—Where the Grapes are ripe afford fire heat only to prevent the temperature falling below 60°. Admit a little air constantly, with free ventilation when the weather is favourable. Do not allow the border to become dry, but keep it moist, and mulch with rather lumpy sweet litter, both to prevent excess of moisture and to keep the soil from cracking. A little moisture in the atmosphere is not injurious to the Grapes, and is highly beneficial to the foliage, which must be kept clean and healthy. If thrips appear recourse may be had to fumigation, repeating in the course of a few days. For red spider there does not appear any safer means of destruction than heating and sulphuring the hot-water pipes, but it must not be overdone or the vapour-fumes injuriously affect the tender-skinned Grapes, especially the white varieties.

Successional Vineries.—As little fire heat as is consistent with the steady progress of the crops should be employed, for with sun heat and abundance of atmospheric moisture more real benefit is gained in a week than in a month with the aid of fires. The Vines being in full growth the temperature may be allowed to rise to 90° or 95°, closing the house at 85°, employing fire heat only to maintain a day temperature of 70° to 75°, and to prevent it falling below 65° at night, yet 5° less will do no harm, but good when the weather is cold. These remarks apply only to Vines in full growth and swelling their crops, as those that have the Grapes approaching ripening should have a rather free circulation of air, those advanced in ripening being kept cooler and drier. Air should be admitted very early in the morning, as the sun acting powerfully on the condensed moisture formed on the foliage during the night usually causes scorching, unless air has been previously admitted.

Watering the borders must be attended to as required—not having stated times, but being guided by the soil's condition. More failures are the result of under than over-watering Vines, the borders being properly constructed and the drainage complete. Water may be required twice a week in the case of Vines restricted to narrow and shallow borders, and once a week for those that have a good run of border from the time of thinning the berries until the Grapes are changing colour, but retentive borders may only require water at fortnightly or three weeks intervals. This difference must be considered, for there is no question about a sodden soil being injurious to Grapes, and of a prolific source of shanking.

Liquid nourishment is more frequently required by loose and light soils than by compact and retentive ones. All will need top-dressings of some approved fertiliser—1, When starting the Vines; 2, when the Grapes attain to thinning size; and 3, when the berries commence ripening, supplying 4 ozs. per square yard at each dressing and washing in lightly. If more stimulation, or rather nourishment, be needed, supply the manure oftener; this is better than increasing the quantity each time and at long intervals.

Late Houses.—In most places the work now on hand is considerable in thinning the berries, and it will continue for some weeks, as in many instances the Vines are only in flower. In the latter case maintain a minimum temperature of 60° to 70°, 5° more for Muscats, shaking the Vines twice a day to distribute the pollen, which will be sufficient for all but the shy setters, and these ought to be carefully fertilised, going over the bunches judiciously with a camel-hair brush and supplying pollen where it is deficient from those that afford it freely. All the large-berried and free-setting varieties, such as Gros Colman and Gros Guillaume, should be thinned while they are in flower, and with those that are likely to have closely set berries it is advisable to thin before the flowers expand, as a practised eye can tell which flower will set by its vigour, and the removal of the weaker strengthens those left wonderfully. While the Vines are in flower, moderate moisture, with a rather

free circulation of air, is desirable; it is also inadvisable to stop or remove laterals while the Vines are in bloom, but when the berries are fairly set remove superfluous laterals and pinch as required, both to prevent overcrowding and concentrate the supplies of nourishment on the Grapes.

Planting Growing Vines.—From now to the early part of June is a good time to plant out those raised from eyes in February or March and grown in pots or turves. The roots need not be disentangled, yet turf-raised Vines are better than potted ones, as they form a straight yet fibrous root, and are not prone to descend deeply as those turned out of the pots with the ball entire. Make the soil firm about the balls or turves, give a good soaking with water at 90°, and mulch with about an inch thickness of short and rather lumpy manure. Maintain a rather humid atmosphere, and shade from bright sun until the Vines become established.

Strawberries in Pots.—The latest plants will now be commencing to swell the fruit, and as the stems are usually long the berries should be supported clear of the pots with forked sticks, pointed at the stem end and pushed into the soil, the stem of the truss resting in the fork or a little below the fruit. Thin the flowers and the fruit. The centre fruit is always the largest, and to encourage these and others of the most promising early thinning must be practised. Grand fruits are obtained in this way of such varieties as Royal Sovereign, President, Sir Joseph Paxton, Auguste Nicaise, and British Queen or Dr. Hogg. The plants should have frequent supplies of liquid manure for swelling their fruit, giving it from the time the fruit commences to swell freely until it changes colour for ripening, when clear water, and not too much of it, only the plants must not flag, will be more suitable. When ripening the atmosphere must be kept rather drier and cooler than when the fruit is swelling, and it will then be less liable to spotting, the flavour will be higher, and the aroma more pronounced.

THE KITCHEN GARDEN.

Runner Beans.—In many gardens not much is gained by sowing Runner Beans before the second week in May. Especially is this so in the case of heavy soils. Fortunately these Beans transplant readily out of pots or boxes, and those who find their earliest sown seed is germinating badly ought to sow more at once in gentle heat, and the plants, duly hardened and put out where there are gaps, will not be far behind the rest. The main crop may be sown now, and where the earliest raised rows are apt to fail in August or early in September, more seed should be sown during the second week in June. It is a mistake to crowd either the rows or plants in the rows, of this important crop. If it is intended to grow the plants without stakes, sow the seed thinly in rows 3 feet apart and crop between with either Lettuce or a row of short-topped early Potatoes. This method of culture is best adapted to the field crops. Runner Beans succeed well trained over archways and are remarkably productive when grown in isolated groups of three or more plants, with a tall stake to each.

Ridge Cucumbers.—The first week in June is early enough to put out plants of the ordinary ridge Cucumbers, unless hand-lights or cloches can be afforded for protection. Seeds, however, may be sown now on specially prepared ridges where the plants are to remain. Open a trench, running from east to west, 3 feet wide and from 1 foot to 2 feet in depth, and fill this with moderately hot prepared stable manure, covering with the soil that was thrown out, sloping it to the south, sow the seed five or six to each patch 3 feet apart, and cover with fine soil. Three plants at each station are ample, therefore thin out early where necessary. Shelter from cold winds is most desirable, and this can be afforded by rows of Runner Beans or tall-growing Peas. The plan of growing Cucumbers, with their stems in little shallow basins, facilitates watering operations, but is almost certain to end in the loss of many plants from canker of the stem. They ought to be raised rather above than below the level—a hint of which some market growers ought to take particular note.

Vegetable Marrows.—Much that has been advanced concerning ridge Cucumbers applies to Vegetable Marrows. They may be either sown where the plants are to remain, or be raised singly in 4-inch pots and put out now if they can be protected, or early in June if they are to take their chance. Plants raised early, and kept in small pots till they are drawn and have wiry stems, are not the best for planting purposes, and would be surpassed by others obtained by sowing seed singly in 4-inch pots and placing these in gentle heat now. Great heaps of manure are frequently wasted on Vegetable Marrows. On these the plants grow too rankly to be very productive, and are the first to fail from drought. Ridges, prepared as recommended for Cucumbers suit them well, and in the warmer parts of the country, or as far north as the midland counties, excellent crops are frequently obtained from plants grown on well-manured ground, and dug as for Cauliflowers or Cabbage. Seeds sown, or plants put out thinly among early Potatoes, will eventually cover most of the ground, and prove more productive than those pampered and grown on much manure.

Gourds and Pumpkins.—These are as easy to grow as Vegetable Marrows, and in far less demand. The fruit of the first named are, in many cases, quite ornamental, and prove attractive when trained over garden seats, walks, and up sunny walls. For each plant open a hole about 2 feet across, partially fill with decaying manure, and return the soil to the top of this. Raise the plants singly in small pots, and plant early in June.

Potatoes.—Early Potatoes planted in the Kentish fashion, having the soil drawn over the sets in ridges when the planting was done, were slightly damaged by frost, but the stalks escaped injury and fresh leafy growth soon began afresh. Many not moulded up in any way were blackened down to the tubers, and in some instances recovery is so

doubtful that it is advisable to break up the ground and plant afresh. Advancing crops should have a dressing of soot or other quick acting manures, sowing these over the whole of the ground between the rows, prior to finally moulding up the rows. Highly cultivated, loose rather than firm ground, invariably produces the best crops of Potatoes.

Hoeing Among Other Crops.—Much heavy rain, followed first by dry easterly winds and strong sun, with a heavy hailstorm when the change came, has left the surface of the ground in a close hard state, and unless something is done to prevent it, cracking will be the next occurrence. So hard is the ground where made fine for seed sowing that it is scarcely possible to loosen the surface by means of the flat or Dutch hoe only. But this must be done, or the progress of the crops will be unsatisfactory, and in a dry season the moisture will be all out of the ground in a surprisingly short period. First lightly break the surface with a fork, afterwards hoeing among the crops as often as necessary to keep down weeds and prevent binding afresh. A mulch of strawy manure will not be wasted on the taller-growing crops, notably Peas, Beans, and newly planted Asparagus.

THE BEE-KEEPER.

EFFECT OF THE WEATHER ON BEE-KEEPING.

It is not necessary to remind bee-keepers what an important factor the weather is in bee management. We would, however, note the difference in the weather experienced during the past six weeks and what it was a year ago. Then the majority of the stocks were very forward, and the bees were increasing at a rapid rate. There has been little difference in the rainfall; but it has been dull and cold, and unfavourable for the bees to make much headway. During the first few days of this month the sun shone brightly from an almost cloudless sky, which revived the hopes of bee-keepers. The wind, however, remained in the east the whole of the time, so that the bees were unable to fly far from their hives.

Throughout the country there is a splendid show of bloom on the early fruit trees. Cherries, both cultivated and wild, have been a mass of white, and the same may be said of Plums and Pears. These, we fear, have suffered considerably from the late spring frosts. Gooseberries and Currants are now in full blossom, but as they are protected somewhat by their foliage, they will probably not suffer so much from the frosts as the former. The Sycamores have an abundance of bloom, and although there is such a wealth of blossom in all directions on which the bees work freely and obtain both honey and pollen, they have derived little benefit from them up to the present time. In the fields, too, there is a great variety of wild flowers containing pollen, which is so necessary at this season.

Should a favourable change in the weather soon set in the bees will doubtless increase at a rapid rate. They will, however, be very backward, and it will be only those stocks that have received careful attention, as advised in previous notes, that will be in condition to derive full benefit from the early-flowering, honey-producing flowers, when the honey flow comes.

PREVENTION OF SWARMING.

Bee-keepers who do not wish to increase the number of stocks in their apiary have often a difficulty in preventing swarming. We do not know of anything more annoying to a bee-keeper when honey is coming in freely, to find that some of his best colonies have swarmed. This, however, may be almost entirely prevented if strict attention is given to them when they require it. Bees do not swarm on the impulse of the moment, they make arrangements for doing so about a week or ten days beforehand. They will not swarm until the hive is full of bees. It is important that bee-keepers should bear this fact in mind, and provide extra space as often as it is required. This is done by enlarging the brood nest, and if the body of the hive is full of frames, which are full of brood and crowded with bees, remove three or four in which the brood is most advanced, and place them directly over the brood nest with a piece of excluder zinc between. This will keep the queen in the body of the hive. The spaces from which the full combs were taken must be filled with combs or foundation.

Another plan is to place a crate of sections or shallow frames on the top; this will keep the bees employed, although honey may not be coming in freely. This should always be done in advance of their requirements. If, in addition, the hives are freely ventilated by wedging up the fronts, and shading them during bright weather, swarming may be almost entirely prevented. Bear in mind it is difficult to prevent bees swarming after queen cells are once started—
AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

F. A. Haage, jun., Erfurt.—*Cacti*.
B. Wells, Crawley.—*Fruit Trees*.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Rhubarb for Early Marketing (W. B.).—Hawkes' Champagne has the advantage of colour and earliness, but it is too small in the stem for general acceptance, hence Victoria claims precedence for general marketing purposes, and after trying all the varieties we found the darker form of Victoria—there are probably several types due to soil or growth in different localities—the most profitable for either forcing or outdoor cultivation. Of course some customers prefer a red Rhubarb, and will give more for a bunch than for one of Victoria, but bulk tells vastly in favour of the grower, hence some grow both varieties, but rely mainly on Victoria. If you want an early variety grow Hawkes' Champagne.

Asparagus for Market (Idem).—There are many forms of the Giant, and when true and carefully selected all are good for general cultivation, including marketing purposes. Some growers like the Early Argentuil, but it is not always to be obtained true. By careful selection types are cultivated that possess earliness, size of heads, and abundance of produce.

Sulphate of Potash Dissolving (W. T.).—The sulphate very often deliquesces in moist air, though this may appear quite dry. We do not know of any other reason, though possibly it may be due to some defect of the article, and of which we can form no opinion, but we have found it desirable to use the sulphate soon after receiving it, or mix with some absorbing substance, such as fishmeal.

Manure for Growing Exhibition Onions (Idem).—The best we know of is apply a dressing of kainit in the autumn, 3½ lbs. per rod, then, or very early (not late) in spring, apply a dressing of very short manure, 1 cwt. per rod, with 3½ lbs. of basic slag phosphate, and half as much mineral superphosphate, harrowing or raking in. Then when the young plants are well up and beginning to grow, use finely crushed nitrate of soda, three-quarter pound per rod, and continue these applications of the nitrate about every three weeks. The method of growing large bulbs of Onions by raising the plants under glass has more than once been described in the *Journal of Horticulture*. There is no work on the subject you name, and the specimen you submitted cannot be identified, being spoiled through the delay arising through wrong direction. The correct address is published every week at the head of this ("Correspondents'") page and the leading article.

Leaves from Fumigated Peach House (Sylvia).—The leaves are simply blistered by the use of the tobacco paper, which, however, is of excellent quality, and not likely, except in overdose and misapplication, to injure the foliage of Nectarine and Peach trees. It requires knowledge and judgment to use tobacco paper and nicotine essence by fumigation and vaporisation when the foliage is tender. The trees have different degrees of susceptibility to injury, which occasions the need of great circumspection. The injury probably arises from the expansion of the air moisture by the heat given off from the burning tobacco paper, causing the condensation of moisture on the surface of the leaves, especially on their thinner and cooler parts, near the edges of the foliage, and thus scalds their tissues. We have noted every phase of both fumigation and vaporisation, and consider both extremely dangerous in the case of tender foliage. With the foliage harder and the moisture of the house reduced to a minimum, no harm results if careful not to give an overdose. For the reasons given we consider it advisable not to fumigate, but instead steep the tobacco paper in water or even nicotine essence treated similarly, and syringe the trees with the decoction or solution, using 2 ozs. of softsoap to each gallon.

Mice Eating Seeds (C. C.).—Had your Beans and Peas been moistened with petroleum, and forthwith dusted with red lead, sowing immediately, and further, if a covering of sharp ashes, half an inch thick and a foot or so wide, had been spread on the surface of the soil over the rows, a slight sprinkling of petroleum being given occasionally, we suspect the culprits would have gone elsewhere for vegetable food.

Planting a Vine (Idem).—If you can find a good Vine well established in a pot, and you can secure it with unbroken growths up to 6 inches or more long, the Vine will grow if planted with the ball of soil practically intact, only removing the crocks and loose surface soil; in fact proceeding exactly as if shifting into a larger pot, and packing a turfy compost firmly round the mass of roots. The soil in the pot must not be dry, or very wet, when planting. Your other question cannot be answered this week.

Galeopsis dubia (L. Row).—The flower sent represents *Galeopsis dubia*, and as it will probably be unknown to many of our readers, we give an illustration (fig. 92) of the flowers and foliage. It is a member of the Labiata family, and is an example of a native plant succeeding well under cultivation. It is an annual, requiring a somewhat sandy soil, in which it grows freely and flowers during the late spring and



FIG. 92.—GALEOPSIS DUBIA.

summer. The flowers are yellow, varying slightly in the depth of colour, sometimes very pale or rarely white, while forms have also been observed with a purplish tinge. They are large and clustered at the apex of the stems, the leaves being sharply cut at the margins. This *Galeopsis* is widely distributed in Europe, but is somewhat rare in England. It is readily raised from seeds, which are produced freely.

Destroying Slugs (J. A.).—The pests are very troublesome in some cases, and become almost proof against dressings of quicklime and soot, though we find these excellent, especially when used just after dark, so as to fall on the molluscs, the lime being quick and the soot fresh. Some prepare lime water, a peck of quicklime being placed in a tub, slaked, and 30 gallons of water poured on, stirred well and then allowed to settle, using the clear lime water after three or four days. It is applied in the evening with a fine rose watering can when the slugs are out feeding, and not many safely escape the effects of the lime water. Another good plan is to use finely crushed nitrate of soda, 2 lbs. per rod, preferably before sowing or planting, or if cropped use when the plants are dry, and keep from their hearts. Of traps we have found fresh brewers' grains very serviceable, placing in small heaps on slates, and attending to them after dark with a lantern. Of all traps the mixing of treacle with bran, the syrup being thinned with a little rum so as to admit of ready sprinkling on the bran, appears the most attractive.

Insect on Apple Shoots (*E. E. and S.*).—The small greenish yellow insects are the Apple sucker, *Psylla mali*, which, by abstracting the juices of the foliage, impairs the vitality of the trees. There does not appear to be any American blight—certainly not on the twigs sent. The best wash is petroleum emulsion—the soluble petroleum advertised—diluted with twenty-five parts of water.

Marguerite Leaf Miner and Coal Tar (*G. A.*).—Boil half a gallon of coal tar in a gallon of water for fifteen minutes, or till the tar and water are perfectly blended, let it cool, then add to it 50 gallons of water. This tar water so made is lightly distributed in fine spray over the leaves, and also over the stages, shelves, walls, sashes—anything and everything near the plants.

County Councils and Gardeners' Improvement Associations (*W. E. Groves*).—What you request would, as you say, amount to a "tall order" if we were to cite from "the Acts of Parliament which govern the whole business" of grants such as you have in view. There is, however, no occasion to do anything of the kind. County Councils have the right to apply the funds placed at their disposal within the terms of the Technical Instruction Act of 1889 to various purposes of education, including horticulture. They can and do make grants to borough and urban authorities, and in such cases these authorities can appropriate the amounts as they wish, but if their application is not approved by the County Council, this body has the power to decline to renew the grant. Also we think grants are made in some instances to the officials of gardeners' improvement associations for such specific purposes as are approved by the county authorities. You had better place your case and requirements before the Organising Secretary of the Technical Education Committee of the County Council, from which you desire aid, and ask his advice as to further procedure.

Juniper Branch Infested with Fungus (*C. C. E.*).—The branch is infested by the fungus called "cedar apples," a name given to the outgrowths of the final stage of the Pear-rust fungus, which occurs on *Juniperus sabina*, *J. virginiana*, *J. phoenicea*, *J. oxycedrus*, and *Pinus halepensis*; when fresh it is abruptly conical or cylindrical, golden-yellow, and very conspicuous. This form is *Gymnosporangium Sabinae*, syn. *G. fuscum*, and from occurring on Junipers, the wood of which is termed cedar in commerce, popularly called "cedar apples." It gives rise to Pear-rust, *Roestelia cancellata*, short-necked, bottle-like bodies, situated together on orange-yellow, cushion-like, swollen blotches on Pear leaves, though there may be the one fungus without the other. On the Juniper we do not know of any remedy beyond removing and burning the diseased parts, and this as soon as detected, so that by destroying the cedar apples containing the teliospores, the disease cannot spread. It has been advised to spray Pear trees with Bordeaux mixture to prevent the Pear rust, but it does not usually do much harm in this country, and we have found removing the affected leaves and burning them the best procedure.

Black Alicante Vine Shoots Terminated by Bunches (*M. K.*).—It is not unusual for this variety to produce the bunches at the end of the growths to some extent, and these will perfect the Grapes, especially if a lateral from the topmost leaf be allowed to grow to the extent of three or four leaves, and thus carry the foliage beyond the bunch, though originated from below it. There does not appear any remedy in long pruning, but the reverse, for, as you say, the shoots otherwise grow very coarse and split into a number of shoots and tendrils at about the fifth joint. The point is to get the wood well ripened, then close pruning gives good results, especially if the Vines are well supplied with potash so as to cause free growth, also using a little sulphate of iron. The following mixture should help the Vines:—Bone superphosphate, dry and crumbling, five parts; sulphate of potash, three parts; sulphate of magnesia, one part; and sulphate of iron, one part; all finely powdered and mixed, using 4 ozs. per square yard, and pointing in lightly, as the roots are not near the surface. The exudation of moisture shows the Vines to be vigorous. The house should be ventilated a little constantly and air admitted freely in the daytime, especially early, without causing a draught or lowering the temperature. Encourage more foliage on the Alicante, and then it may grow out of the stuntedness.

Apple Shoot and Leaves (*W. E. H.*).—There are no caterpillars of the red bud moth (*Tmetocera ocellana*) in the leaves—at least, we failed to discover any, though the leaves were rolled up in some instances. We found, however, a far worse pest—the bud shoot tunneller moth or Apple twig moth (*Laverna vinolentella*), which eats the "heart" out of the twig, so that the young shoot or blossom bud becomes sere, and has a withered appearance. The caterpillar was very active, though only about a quarter of an inch in length, with a black head and tail, also dark segment next the head, and six black legs. We have known the animal half a century on Crab and Crab Apple trees, a closely allied species, *L. atra*, infesting "haws." We know of no remedy or even preventive but to remove the affected twigs, cutting them clean off about an inch below the point of attack and burning them. A grower, who sprays with Paris green in spring and with Bordeaux mixture in autumn against canker fungus, has not got any bud moths, though there are plenty in the old orchards and woods near his plantation. The red or crimson discoloration on the leaves that are stunted and distorted is the work of a fungus, Apple leaf blister (*Ascomyces bullatus*), very common in some localities, especially gravelly or chalky soils. Spray with Bordeaux mixture, and add Paris green for caterpillars.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a

flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Debden*).—*Miltoia flavescens*, see page 402. (*H. W.*)—The variety of *Laelia purpurata*, of which you send a flower, is very good, particularly the rich dark lip; the petals lay back rather too much for a really excellent flower, but this is to a certain extent governed by the constitution of the plant. (*D. H.*)—1, *Abies Douglasi*; 2, *Ceanothus dentatus*; 3, *Prunus Padus*. (*Mayfield*).—Winter Majetin. (*Young Gardener*).—1, specimen insufficient, a *Berberis*, possibly *dulcis*; 2, *Pulmonaria officinalis*; 3, *Davallia canariensis*; 4, *Erica depressa*; 5, *Cytisus racemosus*; 8, *Ophiophogon jaburan variegatum*.

COVENT GARDEN MARKET.—MAY 17TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	to 3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2 0	to 3 0	Lily of the Valley, 12 sprays	0 4	to 0 10
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	4 0	5 0
Azalea, white, doz. bnchs.	3 0	4 0	Maidenhair Fern, doz. bnchs.	6 0	8 0
Camellias, per doz. ...	1 0	2 0	Narcissus, doz. bnchs.	1 0	2 0
Carnations, 12 blooms ...	1 6	3 0	Orchids, var., doz. blooms	1 6	9 0
Daffodils, single yellow, beh. 12 blooms ...	0 6	0 8	Pelargoniums, doz. bnchs.	4 0	6 0
Daffodils, double, bunches	0 4	0 6	Roses (indoor), doz. ...	2 0	3 0
Eucharis, doz. ...	2 0	3 0	„ Red, doz. ...	2 0	4 0
Freesia, doz. bnchs.	2 0	3 0	„ Tea, white, doz. ...	2 0	3 0
Gardenias, doz. ...	1 0	2 0	„ Yellow, doz. (Perles)	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Safrano, doz. ...	2 0	2 6
Hyacinths, Roman, bunch	0 4	0 6	Smilax, bunch ...	2 0	3 0
Lilium Harrisii, 12 blooms	3 0	4 0	Tulips, bunch ...	0 4	0 6
„ longiflorum, 12 blooms	4 0	6 0	Violets doz. bunches ...	0 6	1 6
Lilac, bunch ...	3 0	4 0	„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each ...	1 0	to 7 0
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	24 0	36 0
Crotons, doz. ...	18 0	24 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	8 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	9 0	24 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	8 0	12 0
Ferns, var., doz. ...	4 0	18 0	Solanums, doz. ...	6 0	12 0
„ small, 100 ...	4 0	8 0			

Bedding out plants in variety from 3s. doz.



MANURES FOR SWEDES.

As the time of drilling Swedes is now rapidly approaching, it would seem to be opportune to consider what assistance we shall give to the soil in order to produce the most remunerative crop.

Before we consider the effect of manures we must lay considerable stress on the fact that the preparation of a good tilth has more to do with the production of a crop of Turnips than has the choice of manures. Then, again, we are not going to take into account any

but the present crop of roots. If we considered the whole course, Swedes, Barley, seeds, and Wheat, we should probably have to vote for bonedust, or half-inch bones, with a little admixture of superphosphate, for the immediate benefit of the roots. But we must adhere to our text, and consider manures for Swedes only.

It used to be an axiom in the Midlands that Swedes could not be grown without farmyard manure. That is an exploded idea. We ourselves have grown them well without, and we believe that when Messrs. Machin so easily won the farm prizes offered by the Royal Agricultural Society to Lincoln and Notts a few years ago, the exceedingly fine roots which were such a marked feature of their farming, were grown almost, if not altogether, with artificials alone.

So many experiments have been tried at Woburn and elsewhere with such unvarying results, that it may seem almost useless to chronicle any more tests, but when further information is available, and it clearly endorses the correctness of the previous records, there seems to be justifiable reason for its publication. At any rate, if the truth is not continuously being preached, we very soon find someone ready to teach error, and if the conclusions of the scientific world do not suit the trade and pocket of the manure merchants, they will soon be telling the farmers that experiments may be very interesting, but are of little practical value.

The Lancashire County Council conducted trials of artificial manures for growing Swedes on seven different farms in 1898. The soils were various; peaty, loam, clay, gravel, and sand, limestone being the only formation of any importance not included. Though there were slight differences in the results, as a whole they were wonderfully uniform, and therefore very conclusive in their evidence.

The first and most important point which we notice is that the application of artificials along with farmyard manure produces little return compared with those obtained from the use of the same kinds and qualities of artificials used alone, and that more care is necessary in selecting artificials to use in combination with muck than to use alone.

We find, for example, that on the average of the different soils the weight of crop grown without the aid of any manure, natural or artificial, is 9 tons 11 cwt. 3 qrs., that grown with twelve loads of good yard manure per acre is 18 tons 15 cwt. 1 qr., whilst the different artificials added raised the crop in every case to as much as 21 tons, but in some cases to nearly 25 tons, so that the artificials only increased the crop by from $2\frac{1}{4}$ to $6\frac{1}{4}$ tons per acre more than the manure had done alone. The true conclusion to be drawn from this, and every farmer of any experience will endorse it, that there is a limit to the amount of increase to be produced by plants, and that limit is found much earlier than theorists would imagine, in fact, the lucrative limit is very soon arrived at.

For instance, in these experiments we are considering the increase produced by artificials was about 100 per cent, or practically the same as by twelve loads of manure, whereas where the two were put on together, the produce was only increased by a further 25 per cent., thus plainly showing that the limit of production was being approached, and that it was not merely an absence of any one constituent which made the others inoperative.

One apparently astonishing result was that the artificial mixtures containing nitrogen gave in every case a better return by themselves than when used in conjunction with farmyard manure, whereas superphosphate and basic slag produced a greater weight when used with farmyard manure than either by themselves alone, or by farmyard manure alone. Mixtures containing nitrogen, whether in the form of nitrate of soda or of sulphate of ammonia and including seven different mixtures, in every case gave a higher return when used alone than when used with twelve loads of muck. How can this be? We cannot account for it except by the presence of the anti-nitric bacterium in the manure, which acts on and dissipates the ammonia contained in the artificials, thus actually reducing the crop instead of increasing it.

The first lesson we learn from these trials is a very old and well-worn one—viz., that with muck for Turnips nothing in the way of

ammonia should be used, but that superphosphate and basic slag may be usefully employed with it.

The second, that to grow Swedes without farmyard manure the artificials used should contain, in addition to considerable quantities of phosphate, a certain percentage of nitrogen and potash.

The third, that the use of potash and nitrogen along with farmyard manure is not only unnecessary, but a waste of money.

The fourth, that nitrate of soda, or its equivalent in the shape of sulphate of ammonia, has yielded a marked increase where muck has not been used.

And the fifth, that the use of 5 cwt. of superphosphate, 1 cwt. nitrate of soda, and 1 cwt. muriate of potash has yielded not only the largest, but the most profitable returns.

One very interesting feature of the experiments was the use of a mixture containing two parts each of superphosphate, pure dissolved bone, bone flour, and bone meal, and one part each of sulphate of ammonia and sulphate of potash. This was used in three different quantities—5 cwt., 7 cwt., and 9 cwt. per acre—and with a curious result: for the medium dressing, 7 cwt. produced the best crop, whether used alone or in conjunction with yard manure.

WORK ON THE HOME FARM.

We had a few very fine days with drying winds, and though the nights were a little frosty, the land was beginning to work well; later we had heavy rain, and if the temperature will only rise to a point more suitable to the season, crops and pastures will soon be making better growth. But the truth is, that we have had quite enough rain, and sunshine without frost is required now. A dry May is good for grain crops almost everywhere.

Wheat varies very much, some fields looking thin and patchy, and much gone off from winter promise. The hoe must be kept closely at work here, and if the soil be light a rolling will do more good than harm but there is nothing beats the hoe for improving thin crops. Earthing-up does Wheat as much good as it does to Potatoes, for it seems to encourage it to tiller, and so fill up the gaps.

Top-dressing may still be used, but the land must be in very poor condition if it will pay on thin Wheat. In any case be careful not to apply too heavy a dressing, especially of nitrate of soda. For late dressings 80 lbs. per acre is ample. It may be mixed with salt, and sown by hand; but as good sowers are now very scarce, and the work should be well done, the use of a manure distributor is recommended. The Strawsoniser is excellent for applying small top-dressings.

Do not move Turnip land more than necessary now before sowing. It had better not be ploughed at all as ploughed wet; but if it is thought to be advisable to plough again, be sure to roll it as soon afterwards as the roll will work well, then harrow and roll again if there are any rough pieces still to break. If the land has been well worked in autumn and winter, we should prefer to let it lie until a day or two before sowing time, and then use the spring tooth cultivator and chisel harrows to quickly work a good tilth on the surface for the Turnips, leaving the soil below an unknown quantity.

Mangolds are coming up slowly, and will not do well without more sun. Carrots are coming through, and so are a few weeds. These must be closely watched and exterminated, or there will not be many Carrots.

It is too cold yet to clip the ewes, but they are washed and ready for the shears when the weather will permit.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
		Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
1899.											
May.											
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	7	30.340	53.8	46.2	N.	49.3	65.8	37.6	110.4	—	
Monday	8	30.107	57.6	49.9	N.	50.9	66.6	42.8	120.4	0.010	
Tuesday	9	29.871	49.6	47.3	N.	52.1	62.4	47.0	104.9	—	
Wednesday	10	29.902	53.8	50.0	N.	51.1	62.9	41.9	96.9	—	
Thursday	11	29.924	50.2	48.2	N.W.	51.8	68.9	41.8	104.2	—	
Friday	12	29.942	54.9	50.0	W.	52.9	66.4	46.9	100.2	—	
Saturday	13	29.838	50.9	48.1	N.W.	53.2	63.1	47.2	109.3	0.010	
		29.989	53.0	48.5		51.6	65.2	43.6	105.2	0.020	

7th.—Brilliant throughout.

8th.—Brilliant early; cloudy for an hour or two at midday, and then bright again, but slight showers after 7 P.M.

9th.—Overcast almost throughout, but faint sunshine at times.

10th.—Fair, but sunless morning; smoke fog at noon; sunny after

11th.—Overcast early, faint sun from 11 A.M.

12th.—Fair, but generally dull, though sunshine at times.

13th.—Generally overcast, but a little sunshine in morning.

Temperature still near the average, and rain very deficient.—G. J. SYMONS.

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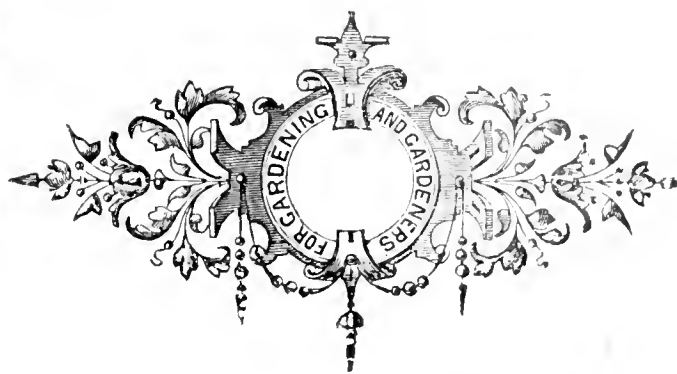
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Journal of Horticulture.

THURSDAY, MAY 25, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

TREES AT KEW.

DECIDUOUS trees and shrubs constitute the chief portion of the attractive features in a good arboretum during May, and certainly no better season can be selected for a visit to this important department at the Royal Gardens, Kew. Even those who are not specially interested in the admirable collections of rare and beautiful trees there exhibited, can appreciate the wealth of floral beauty, the graceful habit of growth, or the fresh, delicate, and varied foliage tints on every side. With strict regard to the scientific objects of the establishment, an observer cannot fail to notice that considerable taste has been displayed in the grouping of the trees in many parts, and the system of "massing," to produce telling effects, is exactly adapted for any park or garden where space permits.

The advantages of such a method are—First, that a group can be formed of young trees or shrubs, and individual defects are lost in the mass; secondly, there are many species which present a rather insignificant appearance singly, whereas in bulk they have a good appearance; and thirdly, if individuals are observed to be developing in a way that is likely to render them more valuable as single specimens they can be removed and their places filled with others. The beauty of a finely proportioned healthy specimen tree must be fully appreciated by all, and at Kew the respective characteristics of the same species can in many cases be studied both in groups and as single specimens.

To write about the improvements effected in our national garden within recent years would be only recording what has been repeatedly noted before, but the arboretum has shared in the advance, and less is heard about the work. In 1768 it is officially stated there were 488 species and varieties of hardy trees and shrubs, and it is now said there are over 3000 in the collection. But it has not been merely in the increase of numbers that improvement is manifest, the nomenclature has been closely examined, a most formidable task, with the result that some approach to order has been secured and

embodied in the useful handlists now available to the public. The confusion that has long existed in private gardens and nurseries with regard to deciduous trees and shrubs has been deplorable, and it is only in such an establishment as Kew that the work of comparison and determination can be satisfactorily carried out. I understood from Mr. G. Nicholson, V.M.H., the Curator, that the lists are undergoing a still further revision, and as he has made a close study of trees for so many years Sir William Dyer must find his assistance invaluable.

At the present time the chief floral attractions are afforded by the numerous members of the great Rose family included in the genera *Pyrus* and *Prunus*, with the latter being incorporated the species commonly ranked under *Cerasus* in gardens and nurseries. Amongst the forms of *Pyrus* there are many worthy of notice, but only a few can be mentioned here. The object in the arboretum is to show the principal wild types either considered as species or varieties, with a few of garden origin which possess some special botanical value as resulting from intercrossing or distinctness of characters. For this reason, presumably, the ordinary garden varieties of Apples and Pears are excluded, and yet a few large beds might be devoted to some varieties with advantage, at least that is my opinion, and it is shared by others. No one would expect to see an orchard formed at Kew, but when the ornamental powers of hardy flowering trees are being displayed, there are certain varieties, especially among Apples, which might well be included, as they may be placed amongst the handsomest trees at our disposal, though this is by no means recognised as it should be. I have had the satisfaction of forming such a plantation, and I should like to see others of a similar design, for there are varieties amongst the Apples which for size, colour, and abundance of flowers cannot be surpassed by any trees adapted for this climate.

The forms of *Pyrus* of especial note just now include the Japanese Crabs, *P. floribunda*, of which the typical tree is a dwarf specimen 6 to 8 feet high with somewhat drooping branches, the flowers small, bright coral red in the bud, and tinted or white when open, produced with great freedom. Several varieties are represented, the most remarkable of which is *P. floribunda flore-pleno* (better known in gardens as *P. Halleana* or *P. Parkmanni*), with larger double handsome flowers borne in profusion along the branches. Three excellent garden varieties which appear to belong to this species, though I have not seen them at Kew, are ornamental both in flower and fruit—namely, *Transcendant*, *Fairy Apple*, and *John Downie*. The last named in particular is one of the finest Crabs grown for ornamental purposes and also for use. The American or Fragrant Crab, *Pyrus coronaria*, is past its best now, but when in full flower is an extremely beautiful tree of compact habit, with large white or tinted flowers, and far superior to the Siberian Crab (*Pyrus baccata* and its numberless varieties) from a floral point of view.

A stately and effective tree belonging to the *Aria* section of *Pyrus*, and closely related to the *Whitebeam*, is *P. Decaisneana*, the origin of which Mr. Nicholson says is unknown. It should be specially valued for its foliage, which, when stirred by a breeze, has a fine appearance, the under surface of the large, evenly elliptical leaves being of a glistening white, contrasting with the bright green upper surface. This tree is very little known in gardens or nurseries; in fact, it does not appear in one of the catalogues at my hand. Another little known tree, *Pyrus lanuginosa*, is noteworthy; it is included in the *Sorbus* section, and is a near relative of the *Mountain Ash*. The leaves are pinnate, with a broad terminal pinna, which gives a very distinct appearance to the tree. The flowers are white, in large cymose heads or corymbs.

Many others could be enumerated, but the "Plums" and "Cherries" demand a few words. The ornamental varieties amongst the true Plums are not very numerous. *Prunus communis* is represented by the variety *Juliana*, which is strong and moderately free. The double form of the common Sloe, *Prunus spinosa flore-pleno*, is also an attractive little tree in flower, but is very slow growing. One of the most telling trees in this section is *P. cerasifera* var. *atropurpurea*

(*P. Pissardi*), and though this is especially valued for its rich coppery foliage, it is very effective in flower early in the season.

In the *Cerasus* section of the genus *Prunus* are some of the handsomest flowering trees in cultivation. As examples of single specimens the most conspicuous is the *Bois de St. Lucie* of the French *Prunus Mahaleb* and its varieties. One of these, named *chrysocarpa*, is a magnificent tree about 20 feet high, and with a spread of branches nearly as much, the latter being slender and drooping gracefully nearly to the ground. The flowers are small, white, and fragrant, but they are borne in such profusion that the tree appears to be literally a mass of blossom. Another variety named *pendula* is represented by a large graceful tree similar to that just noted, but rather looser in its habit. This is much more ornamental in a smaller state; grown as a standard on a stem about 5 or 6 feet high, it forms a beautiful head of drooping branches, and is well suited for the margin of a lawn.

In the avenue between the Palm house and the temperate house are two specimens of *Prunus avium flore-pleno*, that for symmetry and beauty would be difficult to equal. They are each about 15 feet high, forming fine conical heads, the branches thickly clustered with large, pure white double flowers, rendering the trees remarkable at a long distance. Near the Richmond gate is large circular bed some 20 feet in diameter, planted with the dwarf and slender growing *P. japonica* (*P. sinensis*), which illustrates the advantages of grouping or massing when applied to suitable plants. These are, like small shrubs, 3 to 5 feet high, with pale green leaves, and abundant double pure white flowers borne along the slender, graceful branches. This is attractive as a pot plant, but is far more useful and ornamental massed as it is at Kew, and it is one of the hardiest of the introduced forms of *Prunus*.

There is much more of interest to be seen in the Royal Gardens than can be now set forth; in fact a special number of "our Journal" would be required to do justice to the theme, therefore these remarks must be concluded, or the Editor will think I am seeking to fill an undue proportion of his valuable space.—R. LEWIS CASTLE.

BULB FARMING IN IRELAND.

THE TREATY OF AMIENS STREET.

"WOULD I run down to Rush and see the Tulips, as Mr. B — of D —, and Mr. B —, of C —, were going on such a day, by such a train, from the Amiens Street Station of the G.N.R.?" "I would," and saw what has not been inaptly called "Holland in Ireland." One B was on the platform when the writer arrived; the other buzzed in merrily after promptly settling the question of carriage by flitting behind the barrier and emerging with third-class tickets. "No fourth." That nipped any budding argument respecting dignity. Our host rushed in a few ticks before time, counted us, and rushed off with some daring proposition to the powers that be anent stopping the express, of which more anon. "Take your seats" — we took 'em, pondering on what shall it profit a man who tenders sixpence for a penny paper to a grinning gossoon devoid of change.

EN ROUTE.

On the right is a fine bit of seascape as we rush northwards. Unfortunately, the one crushed in the opposite corner, to whom it is a new country, can catch little more than a peep of the passing picture as it unfolds and disappears. However, the merry B., bubbling over with anecdotes, which begin with ladies and smoking carriages and end with horticultural adventures in Italy, locates things in the intervals. By the peninsula of Howth, on by the foreshore, Lambay Island looms up in the distance, and finally two estuaries of the sea are crossed by embankment and trestle bridges, under which the ebbing tide is washing seawards. Rush at last, and a brief inspection of the stationmaster's Flora. *Ribes speciosum*, trained on the station wall, is in full flower, and very pretty are its simple red blossoms. His garden rises up the bank, and has a mild gracefulness in the disposition of many clumps of *Scilla nutans alba*. It is a railway garden accident, however, for a short interview with the Great Northern deputy discloses the fact that he regards gardening as a troublesome sort of business, and we depart to mind our own.

RUSH, AND THE RUSHIANS.

Imagination has proved a vain thing, the little hamlet of Rush and its people being quite unlike any preconceived notions respecting

them. The place has long been noted for early Potatoes, and for little else in modern times that I am aware of; now the bulb industry has appeared on the scene, and having passed the experimental stage is likely to remain. Sand—sand everywhere, and not a bit of soil—barring banks thrown up some 4 feet high, apparently built of turves brought from a distance, as wind-guards to the cultivated plots. Potatoes are grown on flat beds about 6 feet wide, with narrow alleys between, and very sparse and pale coloured is the foliage of what appeared to be Puritans. Lady Rushians are kneeling in the alleys busily engaged in stirring the sand with Dutch hoes quite innocent of handles. Quiet, thoughtful looking people they are, and, I understand, possessed of a strongly marked individuality of character. The naturalist B. deduces that as we are on historic ground (sand, I mean), Danish blood—very much diluted, of course—probably accounts for the feature. One trait of character is particularly pleasing—viz., not only do they refrain from coveting their neighbour's goods, his Tulips, or his Daffodils, or anything that is his, but woe betide the stranger within the district who dares to meddle with property practically unprotected. No notice boards, no spring guns, man-traps, or even a policeman are seen, and the moral salubrity of Rush is unquestionable.

DAFFODILS AND HYACINTHS.

The first plot, of some 2 or more acres in extent, is chiefly devoted to Daffodils, practically over, although a few late blooms nod in the breeze. Judging by the foliage they are happy, and the critics express themselves satisfied. I alone am surprised that they should flourish in pure sand; at which a young bulb-farmer, Mr. Robertson's manager, drops on his knees, and thrusting his hands into the loose sand, hoists up an Emperor bodily, to show his offsets and clean fleshy roots. "Ah! well, seeing is believing; but it's dreadfully dry." "No; things are not what they seem; you will get water at a foot in depth anywhere," says the manager, as he reinstates the evicted root. Here a concrete building is in course of erection for drying the bulbs, and an open shed near at hand is packed with shallow trays ready to receive them. Through a gap another field is entered, which seems to consist mainly of the great trumpet types. Hyacinths have merely to be mentioned. The foliage is luxuriant, and the naked flower stems show where the blooms have been stripped off for the benefit of the bulbs.

TULIP TALK.

The Tulips of May are in all their glory as we flit from division to division, and the busy B.'s improve the shining hour by prying into their cups; the scientific one settling vexed questions of nomenclature, and flies home, later on, with a bundle of blooms under his wing. No attempt was made to compile a list of those seen in bloom to-day. Early Dutch Tulips were, of course, over, but the names of such varieties most striking to a novice were jotted down. Golden Crown, a bronzy yellow, large bloom and dwarf habit, is very showy; Bouton d'Or, a pleasing yellow of tiller form. Masses of the delicate tinted Picotee are charming; this is a very refined flower; and fulgens is a fiery fellow besides which even the gorgeous Gesneriana pales. Both the type and the major varieties of the latter are seen, as well as lutea, its yellow form. Very attractive are macrospila, dwarf crimson; Oliver Goldsmith, rosy crimson; Medusa, bronzy red; and narbonense alba. Viridiflora præcox is, as the name implies, a decided green, but of elegant shape and vigorous constitution. Two primrose-yellow varieties stand out pre-eminent; the one is vitelina, the palest of the two, the other, jaune pure, a truly noble flower. Fairy Queen belies its name, being a dull smoked purple.

Dark Tulips are adequately represented by Alphonse Daudet, Herschell, and The Sultan; in the order named they are expressed by dark, darker, and darkest. The Sultan which, by-the-by, is not nearly of such fine form as its rivals, appears to be well on the road to that desideratum (?) a black Tulip. Laurentia is a bright satiny rose, and the gay Parrot Tulips are well to the front in perfecta, lutea, Mark Graf, and Admiral Constantinople. Miniature gems of the tribe are found in Batalini with grassy foliage, and others yet to bloom at the time of our trip. T. Kolpakowskyana, orange-scarlet, is a name to conjure with in pronunciation, and should fittingly close our brief list. For health, vigour, and cleanliness the Rush Tulips are remarkable, the foliage in some instances being for Tulips of gigantic dimensions; but the secret, if there is one, is locked in Nature's breast. "What manure do you use?" is a pertinent query with such results. The answer is, "Seaweed is the only manure used in this neighbourhood."

AU REVOIR.

The Great Northern express is to pick us up at Rush Station if—we're there. Our host is equal to all emergencies; here's a car. "Can you do it?" The driver looks at his load, and, apparently, defers answering till the station is reached. Too gallant a start, I fear! Poor Rosinante's mind seems spent on a spirited spurt, so we amble along as best we may, limp and deflated. That white flower studying the banks is Cerastium arvense, as good in its way as Arenaria

montana. Here we are at the station, whose master looks quite relieved at having something to show when the express, not yet in sight, stops. "Here she comes; be ready; she won't stop a minute." She didn't. We trained at the rate of one per second, to detrain at Malahide, ere which is reached the tree-embowered ancient castle of Lord Talbot de Malahide is pointed out. La Mucha, Mr. Robertson's residence, is distant a few minutes' walk, whither we repair to find a table adorned with Tulips, and more also, and return like giants refreshed to board another train for Dublin. Amiens Street again, electric tram passing. B.'s won't walk the short distance to Nelson's Pillar, where we part. *Au revoir*, as one flies off to the green plains of Kildare, the other, with a bundle of blooms, to an horticultural council meeting.—K., Dublin.

NIGHT TEMPERATURES FOR VINES.

How varied are the conditions under which Vines—and good Grapes—are grown. Some of the best examples of Grapes which find their way to the markets are grown under conditions diametrically opposed to the cut-and-dried formula often advanced as the best method to pursue. In pruning, stopping, manuring, and watering, some good growers seem to delight in defying recognised principles, and yet they succeed, sometimes to a remarkable degree.

It is simply a matter of manufacturing Grapes by the aid of "brains." Careful observation will continually teach us how to coerce a Vine into giving us a bountiful harvest, under conditions by no means natural. In other instances, a departure from the beaten track often insures more natural conditions than obtain under methods universally practised. This seems to me to be the ease in regard to the night temperatures given to Vines during the growing and fruiting periods. In Vine-growing countries the nights are cold by comparison with the tropical heat of the days, and I am convinced that many growers might, with advantage, give their Vines less fire heat at night than they do, and yet secure as rapid and satisfactory progress by admitting less air during the day till the Grapes are nearly ripe. If air is given in sufficient quantities, and in such a way as to prevent "scald" in the berries or "scorch" in the leaves, the treatment is suitable, except in cases when it is desirable to retard the Vines as much as possible. Much fuel is uselessly consumed in keeping up high night temperatures, instead of regulating the degrees of heat by the outside conditions.

I do not pay nearly so much regard to thermometer readings as I used to think necessary, but rely to a great extent upon placing the hand on the hot-water pipes; during cold nights I aim at having them hot, and vary the degree of heat in them according to the state of the weather. Some might advance—in condemnation of this practice—the fact that vineries vary considerably in the proportionate amount of piping they contain, but it is quite easy to get accustomed to the capabilities of any house in this respect, and the experienced man can readily detect on entering the house if the temperature is or is not suitable for the Vines.

Younger men, who perhaps need the thermometer to guide them, should be allowed considerable latitude in the matter of night temperatures. It is far better to allow the thermometer to fall 5° during cold nights than to overheat the pipes to maintain a given degree of heat. Let it, however, be clearly understood that I make a distinction between the above practices and that of allowing the hot-water pipes to become quite cool on cold nights, for it is such mistakes which cause damage to crops. In a nutshell, the matter stands thus, Do not be too particular in regard to temperature, as long as the hot-water pipes are well heated in cold weather, and only moderately during warm nights.

Thermometers are useful instruments, which we could not well do without, but they are only partial guides to the requirements of plants, fruit trees, or Vines. In Nature temperatures fluctuate greatly, and it is with my early forced Vines that thermometers are most useful. We have a late Hamburgh house in which no thermometer is kept, yet the Grapes grown in it are as satisfactory as they well can be from a market point of view.

Now for a few words in regard to the night temperature under which Vines succeed. In an early Hamburgh house we succeeded in getting a splendid set, although the night temperature frequently fell below 55°. There are also two rods of Muscats in this house, and with exactly the same treatment the bunches have set as well as I have generally found them do in instances when a night temperature of from 70° to 75° has been maintained. I am being more than ever convinced that high night temperatures for Vines are a mistake. At the flowering period the vital points to observe are to maintain a buoyant atmosphere during the middle of the day, and not to unduly excite them by high temperatures at night.—H. D.

LEGAL RIGHTS AND OBLIGATIONS OF MARKET GARDENERS.

WILL you oblige by giving me information, through the medium of the *Journal of Horticulture*, on the following questions as to what is the law in regard to the tenant-rights of bona-fide market gardeners and their claims in respect of the following?—ENQUIRER. [As the whole subject is of considerable importance, we publish the questions, with replies, but draw particular attention to the saving clause at the end.]

Q. 1, Can the Acts compel a landlord or incoming tenant (when leaving a place in October) to take at valuation such things as Daffodils, Narcissus, or other bulbs? Do they come under the same rule as other root crops?

[A. 1, There is no mention of bulbs in the Market Gardeners' Compensation Act or in the Agricultural Holdings Act, and it is doubtful whether any claim for them could be substantiated. In the first case tried in Scotland under the Market Gardeners' Act (Taylor v. the Governors of George Heriot's Trust), decided by arbitration, a claim for Narcissus bulbs was made and withdrawn, and, the referee said, "very properly" withdrawn. It would be much safer to raise and sell the bulbs, unless the landlord will give a written agreement to pay for them by valuation.]

Q. 2, What is the law in respect to such things as Raspberries, Currants, Gooseberries, Strawberries, Rhubarb, and herbaceous plants generally? If the tenant plant such things in the soil, how long is it necessary for them to be planted before the time expires in which they can be moved by the tenant?

[A. 2, In the first place, it must be stated that claims for compensation under the Market Gardeners' Act are valid under only one or the other of two conditions: (a) If under a tenancy current at the commencement of the Act (1st of January, 1896) the holding was in use as a market garden with the knowledge of the landlord, and the improvements were carried out by the tenant without his having received, previous to their execution, a written dissent from the landlord; or (b) if the holding has been taken since the commencement of the Act, and it has been agreed in writing that it should be let or treated as a market garden. Under either of these conditions the landlord can be compelled to pay the out-going tenant for all fruit trees or fruit bushes permanently set out by him, for all Strawberry plants set out, and for the planting of Asparagus and other vegetable crops, no doubt including Rhubarb. All fruit trees and bushes not permanently set out can be removed by the tenant; but if he does not remove them before the termination of his tenancy he will not be entitled to any compensation for them. The moment after they have been permanently set out compensation is claimable for them if the tenant quit his holding, and, as we understand the law, he cannot afterwards remove them without the landlord's consent. But if he is a nurseryman who habitually sells trees, it might be assumed that the trees were not necessarily intended to remain permanently.]

Q. 3, Can a tenant plant an open space with such things as are mentioned in question No. 2, or permanent fruit trees, and claim for them on leaving; or is he compelled to remove them in case the landlord or incoming tenant declines to take them?

[A. 3, This question is answered in No. 2. The landlord is bound to pay for all fruit trees, bushes, &c., permanently set out, no matter whether the incoming tenant agrees to take them or not.]

Q. 4, When a tenant enters upon a place and pays no inventory, and there are already planted 1000 Rasps, Gooseberries, or other things of a similar kind, and the same tenant remains ten or twenty years, and those things are either worn out by time or neglect, is he bound to replace them, or, if he has planted others to replace them, can he claim for those so planted when leaving?

[A. 4, A tenant is liable to pay a landlord for dilapidations, due to his neglect or mismanagement; but we do not think he would be bound to replace trees or bushes worn out by age, unless he agreed to do so in his contract. On the other hand, a claim on his part would presumably arise if he did away with a worn-out plantation and planted a new one.]

Q. 5, In the event of a place having been resold in the middle of a tenant's tenancy, and there has been no agreement between the tenant and the new owner in respect of inventory, how would the matter stand on the tenant leaving?

[A. 5, The new owner would take over the liabilities of the old one in relation to the tenant.]

N.B.—It must be understood that these opinions simply express our interpretation of the Market Gardeners' Act, that we do not give them as the judgment of a legal expert, and that we cannot assume responsibility for their accuracy. The Act can be bought for a halfpenny, or a penny by post from Messrs. Eyre & Spottiswoode, East Harding Street, E.C.; and our correspondent and readers may form their own opinions as to the correctness of our interpretation of it, or consult a legal adviser.

LINARIA MACEDONICA.

SUCH is the name of the specimen forwarded by "W. Raby," and he may also like to know that many species of *Linarias*, or Toad-flax as they are often called, make charming plants when grown in pots for a cool house. The genus being a large one, including both hardy herbaceous and annual kinds, it is rather difficult to make a selection; but *L. macedonica* (fig. 93) is highly ornamental, and might be used with good effect. It commences to bloom in early spring, and continues for a long time. Like most of the *Linarias* it is of easy culture, requiring only some rich soil and a light position in a cool house or frame. It freely reproduces itself from seeds, growing about 18 inches high, and flowers profusely in a short time. The flowers are of a bright orange colour and very attractive.

FLATLAND.

A MORE curious and extraordinary part than the Low Country it has rarely been my lot to experience. Returning lately from a visit to the Balkan Provinces and Turkey, and fresh from the mountain regions along the Elbe and the picturesque châteaux perched high on seemingly impossible crags and such like points of vantage, my surprise and interest was extreme on arriving at Amsterdam, and with that place as my centre, inspecting the country around in all its peculiarities of dykes, dams, canals, windmills, and luxuriant meadows. Such an absolute and perfect flat I have seen nowhere else in the nature of cultivated land (excepting the partially cultivated great plains of central Europe), the nearest approach to it being its first cousin the Lincolnshire fen and marsh land.

All reclaimed from the sea and protected by high banks there is not the vestige of a hill or mound of any description, the only elevated parts being where the ground has been raised to bridge over a dyke. It speaks volumes for the indomitable energy of the people to have conceived and carried through such a monstrous undertaking. Talk of the Emerald Isle, I doubt, indeed, if the green of those Dutch meads can be anywhere equalled; such luxuriance, they looked as if fattening bullocks were the veriest pastime.

I travelled across a good stretch of this remarkable country, out to the Zuyder Zee, where I visited the island of Marken, a curious spot inhabited by natives, who have preserved their pristine customs and dress against the blandishments and the march of civilisation and progress.

I reached the island in a small sailing lugger, almost flatbottomed, and drawing an incredibly small amount of water, the depth of the Zee varying from 2½ to 4 feet. It reminded me of nothing so much as punting over Port Meadow in time of flood during my undergraduate days at Oxford.

The open flower markets all alongside one of the principal quays in Amsterdam, and leading to the centre and focus of the town called "the Dam," is a charming sight. Not only the far-famed bulbs of every description, but beautiful flowering shrubs and plants of all kinds in their damp peaty mould greet the eye. Rhododendrons, Azaleas, Pansies, Anemones of every shade of colour attracted one. Seeds in 5 cent. packets, too, of all sorts, entice the sous from the recesses of your pockets. I was tempted to try a dozen Strawberry plants, they looked so fresh and healthy, and trust they may render a good account of themselves in a few weeks' time.

The farmhouses of these low lands of Holland look exactly like red brick pyramids, such being their shape as appearing to within a short distance. Except the tiny villages there is nothing else to relieve the eye (there being no trees), but the windmills, of which there are very large numbers, used principally for pumping away into the main dykes the surplus water. No reference to a visit to Holland in spring would be complete without a word on the bulbs. Of course I went out to Haarlem to have a look at them. I visited several gardens. All afforded the same gorgeous display. Great patches of superb pink, mauve, yellow, and white Hyacinths varied their beauties with richly perfumed plots of white and orange Narcissus, while the Tulips, which were just in their prime, made a very bold bid for first favourites. I noticed the Pansies as being very much in evidence, and making a very beautiful though modest display as compared with the stately beauties before mentioned.

It was altogether a most enjoyable and successful jaunt to the bulbs, and I returned to Amsterdam much pleased with myself and things in general. In a short time I terminated my stay in this most interesting and unusual country, after a last and brief visit to one of the Hollanders' little bathing places, Zandvoort—a curious place among the sand dunes, and only regretted the season not being sufficiently advanced for a bathe in the good old Dutch briny.—J. A. CARNEGIE-CHEALES.

LONDON GARDENS OVER FIFTY YEARS.

No. 8.

WHEN our good Queen takes one of her drives about West London, and such are now very occasional, she cannot but be impressed by the changes which have passed over Brompton and South Kensington, should she happen to take that direction. What a different suburb it is to what her Majesty knew it fifty or sixty years ago. I do not think we can point to any other locality near London which has been so revolutionised in a half century. South Kensington! You will not find the name on maps of 1849 or 50, but there is Old and New Brompton, and "Little Chelsea," which seems singular, a sort of link between Chelsea and Brompton. Now, the name of Brompton is going out of use; it is of some antiquity, traceable to the fifteenth century, at least here was possibly the town or manor of someone called Brom or Broom, nobody can tell.

The air of Brompton was reputed to be so pleasant and healthful that people said the place was an English Montpelier; streets were multiplying thereabout when I first knew it, yet still there remained some of the charming villas, with their shrubberies and old style gardens. Brompton at that time was the favourite abode of actors, artists, and singers, amongst other celebrities. But, above all things, we remember Old Brompton by its nurseries and market gardens, extending up to and around Earl's Court or West Brompton, a few orchards thereabout, too, more towards Fulham and Hammersmith. The locality was eminently suitable for gardening purposes, soil good, sheltered from the colder winds, and at a convenient distance from the chief London markets. Large profits were made by growers during years of average success.

To the present-day Londoner, or the country visitor, South Kensington and its neighbourhood is chiefly known as the temporary abiding place of big sensational exhibitions, and the permanent home of national museums, art, science, or other institutes; it was just the locality likely to be taken advantage of when a start had been made by the South Kensington Museum. Environing these are many handsome residences, some of them occupied by zealous patrons of horticulture, and it is satisfactory to find that Brompton, once renowned for its flowers and fruit, has still its open spaces secured against the builder's invasion, some of which indicate improvement, for where not so long ago Cabbages or Potatoes grew are now to be seen the choice flowers of the season.

The influence of the temporary occupancy of gardens by the Royal Horticultural Society is still observable in this suburb. But it will take years to replace the fine old trees which had to be cut down, especially Acacias, Limes, Planes, and Chestnuts. Magnolias of two or three species flourished about Old Brompton, and the place was famous for its Poplars; there were good examples of the grey variety, the Lombardy, and the Tacamahac, the last few years more Poplars have been planted along several roads. The Birch, again, does well in London, and is a graceful and pleasing tree, if not very shady, but the trouble is to protect it while young.

The early fame of Brompton in horticulture rested mainly on Brompton Park—first of all a deer park, no doubt attached to an ancient mansion, which became a nursery towards the end of the seventeenth century. Commenced by four gardeners, it owed to London and Wise its world-wide repute, who formed the firm in the reign of Anne, and had an extent of 100 acres to work upon. On the Kensington side they formed an open-air winter garden, then quite a novelty, and did a large business, chiefly in shrubs or trees, the stock being so extensive that Bowack estimated it to be worth many thousands of pounds in 1707. Various changes ensued, but we note the fact that the last occupiers were Gray, Adams, and Hogg. During 1850 the remnant of the nursery was offered for building purposes; it was then reduced to about a fourth of the original dimensions—part had been built upon, and smaller nurseries had been formed out of another part. A portion of the old wall, half a mile long, which used to be covered with Vines, remained till the above date. Between Brompton Road and Kensington Gore a green narrow lane skirted the east side of Brompton Park Nursery; a remnant of this, near the church, was open in my boyhood, where I went seeking wild flowers! Dr. Hogg once remarked to me how he had found from the accounts of Brompton Park nursery that before railway times, though the locality was not close to the Thames, it was employed for the conveyance of goods to market, also for the importation of manure from a distance. The front of this nursery was in the Kensington Road.

Another historic nursery that disappeared about the same date was the Kensington Nursery, started by Furber, and subsequently taken over by the firm of Malcolm & Co., for many years connected with Stockwell, Surrey. Hale House, Cromwell Lane, on the south of the park, was the nursery of the Pouparts (quantities of the Muscadine Grape were produced here), and adjacent to it was Mr. Kirk's, also on the ground of the old park. He was in repute as a producer of new varieties of fruit trees. Faulkner tells us that he could show at one

time more than a hundred sorts of App'es—some not worth anything, I daresay.

Adjacent to, if not within the borders of the park, Gibbs of Old Brompton had an establishment for flowers and shrubs, but he did most business in supplying seeds of grasses and cereals raised in his experimental garden. All these passed away, but the formation of the South Kensington Gardens, under the auspices of the Royal Horticultural Society, seemed to recall the old traditions of Brompton Park at its best, while exhibiting the latest improvements and novelties in horticulture. Before that enterprise was entered upon, however, the Society had a much smaller garden at Kensington, near Holland

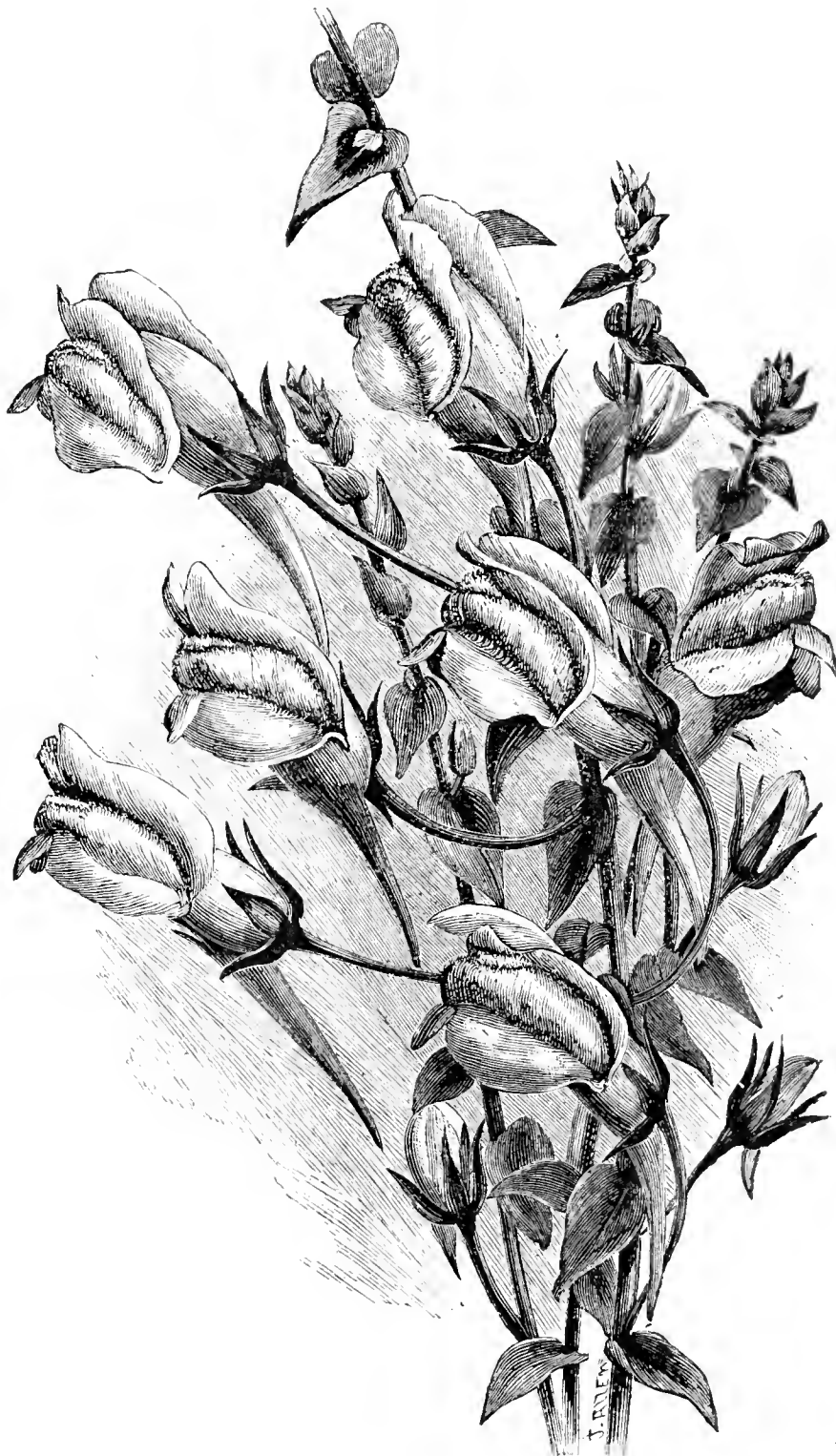


FIG. 93.—LINARIA MACEDONICA.

Park, the exact position of which has been disputed; I believe it must have been about the spot where is now a railway line. This carries us back to 1818; a few years after that it was relinquished, also the temporary garden at Ealing, and the Chiswick ground was taken. Encouraged by success, the Society looked again towards the Court suburb, and, with the hearty approval of the Prince Consort, took possession of 22 acres at South Kensington in 1860, I think. The plans, drawn up by Captain Fowke, Messrs. Nesfield and Smirke, embodied his ideas or suggestions, and they had his corrections finally before they were executed.

There were already many trees and shrubs on the ground, giving a considerable advantage as a basis to start upon, though they limited the prospect in some directions, but did not interfere with the working out of the design, which was to present a garden in the Italian style, combining the effects of Nature and Art. Of course a certain class of critics said the garden was too artificial or elaborate, a profusion of "fountains, canals, cascades, terraces, balustrades, alcoves, and parapets, with vases, statues, and numerous other embellishments," still the variety was agreeable. One of the features of this garden

that pleased most visitors, was the admirable way in which climbing plants were distributed over the walls, alcoves, and arcades, softening the outlines, but not overwhelming them with greenery. The bedding in these gardens served as a model, which was extensively copied elsewhere, especially in the arrangement of contrasts of colour and the avoidance of too free a display of brilliant tints.

It was here, too, the fashion began of making up beds in which foliage, not flowers, are the chief characteristic. Long undulating borders along some of the walls displayed very attractive colouring, and at the top of the central walk a grand circular bed, surrounded by other circles and triangles, which perhaps would not suit the present taste, but served to show off some favourite flowers. Unfortunately the South Kensington Garden is not associated with one of the brighter periods in the history of the Society. From 1883 to 1886 a large portion of the ground was occupied by exhibitions, closing with the important India and Colonial one; and, finally, the northern part was utilised for the Imperial Institute.

Brompton, indeed, as it extended to the west, was the quarter, in the earlier years of the century, of a giant amongst our suburban gardeners. This was the celebrated Gunter, who had more than sixty acres of land under cultivation between Brompton and Kensington. For awhile he reigned at Earl's Court over nurseries and market gardens. His predecessor, Hutchins, of an old Chelsea family, had also extensive grounds between Chelsea and Kensington. But by 1850 a change had commenced, the Boitons and other terraces were building adjacent to Old Brompton Road. Names once familiar and suggestive disappeared; vainly we might seek for "Salad Lane" or "Hogmere Road," but on the south side, some years after, there yet remained Honey Lane and Walnut Tree Walk, overlooking fields or gardens near Brompton Cemetery. Gunter is said to have been one of the first to employ steam for heating forcing-houses. It was after 1863 that the remnant of the gardens between Gloucester Road and Earl's Court vanished, to be succeeded by new streets.

Brompton Heath seems a comical name now, yet it was a heath, or sort of common, part of the ridge of waste land which extended, in the olden time, from Pinlipo to the border of Kensington. Beyond it was Brompton Vale, across which wandered a little streamlet which somehow reached the Thames. Several market gardeners cultivated portions of this heath fifty or sixty years ago; it was a good position. I remember part of it was open till 1865 or 1866. Vegetables and fruit, rather than flowers, were the main object of Brompton gardeners formerly, as being then more remunerative.—J. R. S. C.

CLANDON PARK.

MR. H. BLAKE, Lord Onslow's gardener, is having a small trial of some of the more recently introduced Brobdignagian Onions, obtained in packets direct from the vendors. Some of them gave plenty of plants relatively, but one of rather high class pretensions gave but eighteen plants from a 2s. 6d. packet. All the seeds were sown under glass. Presumably the majority grew the wrong way. However, grown well, yet not to produce giant bulbs, it is hoped that some evidence may be obtained as to distinctness or otherwise. For several years he has been troubled to induce Raspberries to ripen canes—these usually dying in the winter—and a new plantation of Superlative, from Messrs. Bunyard at Maidstone, was made on a fresh piece of ground. These have done splendidly, and this year present every appearance of giving a fine crop. When the old site of the Raspberry plot was trenched it was found 2 feet down to be a solid bed of clay, on which water stood. That clay has now been removed, and the ground is carrying a fine breadth of root crops.

Most valuable in one quarter is a fine breadth of Sutton's Late Queen Broccoli that will furnish heads up to the end of the month. This is a most useful vegetable. Elsewhere was an admirable breadth of Flower of Spring Cabbage, just getting fit to cut from. Universally Cabbages are late this season. This variety is here particularly good, and not a plant has bolted. It is evidently a first-class spring variety. I should have mentioned that in sowing seed of Late Queen Broccoli, the operation does not take place until the end of May.

Tomatoes are being grown in a span house. I noticed that the roots are limited strictly to long stout wood troughs, 16 inches wide, and 9 inches deep within. The plants stand 15 inches apart in these troughs. How well they look, so stout and sturdy, and full of promise of a fine crop. The variety generally is Perfection. A great crop is obtained from this house on plants so grown yearly. There were at one end two plants only of the variety which Mr. Blake had in fruit in a pot so wonderfully last November, and these planted at the same time had set fruits and were much ahead of the others in bloom production. Melons do well, the chief variety being Hero of Lockinge.

Having formerly been greatly troubled by woodlice, earwigs, and mice, Mr. Blake had some cylinders made of tin 8 inches long and 4 broad. Halfway along these cylinders was fixed a trough, 2 inches wide and 1½ inch deep, to hold water. When the young Melon plants are put out on to the soil bed, these metal cylinders are placed over them, singly, and pressed down into the soil, so that the bottoms of the circular troughs touch the soil. These are then half filled with water. The result is that never since the adoption of their use has there been trouble

from insects, or mice, or canker, or similar pests, so that the making of these things has been well repaid.

A fine collection of Marchioness of Exeter, White Lady, and other double Chinese Primroses in a frame, were just in the process of rooting from side growths. The surface soil is dressed with three parts of sand to one part moss. This is done in April, and in two months, without further trouble, all the side growths have rooted well into it, and fine plants are obtained.—A. D.

GARDENING IN TRINIDAD.

THAT gardening in this "Pearl of the Antilles" differs much from the gardening usually written about in the *Journal of Horticulture* will be made apparent by giving a few meteorological statistics. The mean annual rainfall for the ten years from 1887 to 1897 was 71.10 inches, and the mean annual temperature for the same period was 78° F. The mean maximum was 87°, and the mean minimum 69°, giving a range of only 18°. In some parts of the island, at Diego Martin, in November of last year, we had over 22 inches of rain in one month, and at Moruga Road Station last year the total rainfall was 128.24 inches.

It is during the dry season—from January to May inclusive, that gardening is simplest and safest, because then there are no heavy rains which in the wet season damage nearly everything, but especially those plants which are natives of less moist climates. Amongst these are several vegetables and flowering plants which are common in the gardens of the British Isles. We grow Tomatoes and Cucumbers with fair success. Melons have hitherto been unsuccessful, but we intend trying again. Cabbages are seldom worth growing unless planted about the end of the wet season, when the plants get established before the drought commences, and they then produce good heads in the dry weather with occasional watering, while they are less apt to rot, which they do readily in the wet season. Kohl Rabi, Kidney Beans, and Lettuce are very successful with us, likewise Radishes and Beetroot. Peas and Potatoes are scarcely worth growing, neither is Cauliflower. We grow several tropical or sub-tropical vegetables, such as the "Garden Egg," fruit of *Solanum melongena*, the Bitter and Sweet Cassava, Yams, the tubers of various species of *Dioscorea*, some of which, in my opinion, are better than good English Potatoes. We have hitherto been unsuccessful with Vines, but have now some seedlings growing under glass, of which we hope to have a successful yield.

Tropical fruits are abundant, such as Mangos, Sapodillas, Cusheaws, Star and Golden Apples; and Oranges, Lemons, and Limes are plentiful, so are Bananas, and they, like several of the other fruits mentioned, are far superior in flavour and lusciousness, when left to ripen on the tree, to those sold in London or elsewhere, being ripened a considerable time after being taken from the plant.

Amongst bedding plants there are several of those used in England for the purpose which do well here in the dry season. *Tagetes patula* and *T. signata*, the French and Mexican Marigolds, do fairly well; so also do *Zinnias*, *Cannas*, and *Gladioli*. We have some charming beds of *Coleus*, *Crotons* (*Codiaeum*), *Russelia juncea*, with plants of *Asparagus plumosus* here and there, and *Alternanthera versicolor* or *Pilea muscosa* for an edging.

The front gardens of the villas in the town suburbs are gay with *Crotons*, *Dracenas*, *Acalyphas*, and *Palms* as foliage plants. One of the commonest flowering shrubs is *Hibiscus Cameroni*, with large bright crimson flowers. There is also *H. schizopetalus* and other species which I do not know. *Plumbago capensis* is flowering well now, and is sometimes seen in the form of a hedge. *Aralia Guilfoylei* is also a common hedge plant. These are decorative hedges. For ordinary field hedges a succulent species of *Euphorbia*, probably *neriifolia*, is largely used, and with its prickles and poisonous juice it forms an almost impenetrable barrier for man or beast.

Roses do fairly well in some places, where they are surely protected from the ravages of the "parasol" ant, one of our most destructive creatures. If we notice as we walk along some morning that one of our Rose bushes is stripped of half its leaves, we shall find on examining the ground that an army of ants is busy carrying the leaves off shoulder high, and as they work single file, and each one's booty is carried like a miniature parasol, the procession is about as interesting and amusing as the result is destructive and deplorable. Other kinds of ants devour seeds, and the mole-cricket has the annoying habit of nibbling through the stem of young plants just below the leaves.

Before finishing this brief sketch I would like to note a few climbers which are grown here. *Thunbergia grandiflora* flowers well, and is often seen. Various species of *Allamanda* and *Clerodendron*, *Ipomoea digitata*, and *I. quamoclit* are met with occasionally. We have a fine form of *Bougainvillea spectabilis*. It flowers with great profusion, the bracts being of a bright brick red. A plant of this has climbed a tree about 80 feet high, and occupies a large part of its crown. As the tree is deciduous it forms quite a feature in the landscape, the bright red patch contrasting well with the surrounding greenery. Such are a few observations made by a gardener lately arrived in this lovely and fertile island.—X. L. C. R.



RECENT WEATHER IN LONDON.—We have not had weather that would meet with the general appreciation of holiday makers during the past few days. On Bank Holiday rain fell in torrents during the morning and evening, though there was a gleam of sunshine in the afternoon. Tuesday was much the same, but the showers were not so heavy. On Wednesday morning it was dull and colder.

WEATHER IN THE NORTH.—The past week has been marked by bitterly cold easterly winds, excessive rainfall, and an almost total want of sunshine. Thursday and Saturday were days of continuous and heavy rain till well on in the afternoon. Sunday and Monday were fair, but very dull and unseasonably cold, the N.E. wind making it more like March than May.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—SCIENTIFIC COMMITTEE. Present: Dr. M. T. Masters (in the chair), Dr. Müller, Rev. W. Wilks, Mr. E. F. Im Thurn, and Rev. G. Henslow, Hon. Sec. Diseased *Hemerocallis*, &c.—A leaf was received bearing decayed spots, apparently due to fungoid growth. This, together with a Peach diseased by a form of mildew, and Apple twigs with knots, were forwarded to Dr. W. G. Smith for examination. *Podisoma* on Savin.—Dr. Masters exhibited specimens of this fungus, which gives rise to *Ræstelia cancellata* on Pear trees. *Leclidium grossulariae*.—He also brought specimens of the "Gooseberry cluster cups." It occurs on leaves and fruit of the Gooseberry and Currant. In some seasons it is of frequent occurrence. Morel.—Dr. Masters also showed a small Morel, found—as is somewhat rarely the case—growing singly. He recorded the fact that after two Poplars had been blown down in Mr. Masters' garden at Canterbury in 1837, Morels grew every other year round the stumps. Mr. Im Thurn observed that the Morel was a common fungus on the Wiltshire moors among Beeches.

HORTICULTURAL CLUB.—The usual monthly dinner and conversation took place on Tuesday last at the rooms of the Club, Hotel Windsor; there was a good attendance both of members and their friends. The chair was occupied by the Rev. W. Wilks in the unavoidable absence of Sir J. D. T. Llewelyn, Bart. There were present besides Dr. Maxwell T. Masters, Sir John Farley; Messrs. J. H. Tritton, C. E. Shea, R. Gofton Salmond, George Monro, Peter Kay, H. A. A. D'Ombraim, H. Somers Rivers, C. Mason, Philip Crowley, and others. A very interesting paper was read by Mr. Gofton Salmond on the preserving of vegetables by evaporation, and a number of specimens of vegetables so prepared were exhibited. An interesting discussion followed, in which most of those present took part, and the feeling among all present was that the process would be invaluable for the army and navy, and for all expeditions where the obtaining of fresh vegetables would be a matter of great difficulty. A cordial vote of thanks was proposed and carried to Mr. Salmond for his excellent paper, which appears on page 430.

ROYAL METEOROLOGICAL SOCIETY.—Owing to the public improvements in the neighbourhood of Parliament Street, the Royal Meteorological Society has been obliged to vacate its offices in Great George Street and find accommodation elsewhere. The Council ultimately took rooms at Prince's Mansions, 79, Victoria Street, which have been fitted up to meet the requirements of the Society. On Tuesday evening, the 16th inst., the President, Mr. F. C. Bayard, LL.M., held an "at home" in these new rooms, which was largely attended by the Fellows, among whom were the following:—Mr. W. B. Bryan, Mr. Baldwin Latham, Professor J. K. Laughton, Admiral Maclear, Dr. H. R. Mill, Dr. R. A. Scott, F.R.S., Mr. G. J. Symons, F.R.S., Dr. C. Theodore Williams, Mr. E. Woods, and others. An interesting exhibition of instruments and photographs was arranged, and there were also several demonstrations by the optical lantern. At the monthly meeting of the Society, held on Wednesday afternoon in the above rooms, Mr. H. N. Dickson, F.R.S.E., read a paper, entitled "The Mean Temperature of the Surface Waters of the Sea round the British Isles, and its Relation to that of the Air." A paper by Major-General Schaw, C.B., on "Some Phenomena connected with the Vertical Circulation of the Atmosphere" was also read.

GARDENING APPOINTMENT.—Mr. R. W. Eastwood, for the last ten years foreman at Worsley Hall, Manchester, has been appointed head gardener at the County Asylum, Whittingham, Preston, Lancashire.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A most successful meeting was held at Reading on Tuesday, May 16th, over 250 persons being present to discuss the desirability of forming a branch of this admirable institution at Reading. From the tone that prevailed it is hoped that the branch will be a very successful one.

ROYAL BOTANIC SOCIETY.—At the show on the 17th inst. the following medals were awarded: Silver-gilt medal to Messrs. J. Peed & Sons for Caladiums; large silver medals to Messrs. Laing & Sons, Forest Hill, for stove and greenhouse plants; W. Paul & Son, Waltham Cross, for group of Roses; Barr & Sons, for Tulips and other flowers; and Rivers and Sons, Sawbridgeworth, for Nectarines; silver medals to Messrs. R. & G. Cuthbert, Southgate, for new hardy Azaleas, and to Wm. Rumsey, Joynings Nurseries, Waltham Cross, for Roses; small silver medals to Messrs. C. Turner, Slough, for Carnations; Kelway and Sons, Langport, for tree Paeonies; L. H. Calcutt, for floral exhibit; and to W. H. Moss, for floral table decorations; large bronze medals to Messrs. J. Prewitt, Rayleigh, for table decorations; and A. Smith, for Roses and Pansies.

POTATO UP-TO-DATE.—That this remarkably fine and productive variety has disappointed some of its growers when cooked there can be no doubt. It has white granulated flesh, that cooks quickly, usually much quicker than is generally anticipated, and when regarded as done is much to pieces. The best corrective is found in pouring off the water from the saucepan just before the tubers soften, then finishing them gently in a dry condition. But no doubt this Potato would greatly benefit could it have infused into it some of the yellowness and greater consistency of flesh found in the Bruce or similar more solid fleshed varieties. Raisers should take a note of that, and endeavour to secure this desideratum. Up-to-Date furnishes not only grand crops but the tubers are handsome, and worthy a high place at exhibitions. Probably it is yet the heaviest cropper in cultivation.—D.

DEATH OF MR. JAMES KELWAY.—We observe with regret an announcement of the death of Mr. James Kelway, the founder of the well known firm of florists of Langport. The venerable head of this firm died at Huish Episcopi, Somerset, on the 17th inst., in his eighty-fourth year. The deceased gentleman was highly esteemed for his urbanity by all who knew him, and was one of the most trusted of men in the town, which he served so well in his public capacity in municipal offices, including that of Mayor, to which he was eventually and unanimously elected. Mr. Kelway was a kind hearted, clear headed, business man, upright and honourable in all his actions, and his genial presence will be greatly missed by all who had the pleasure of associating with him. He was not often seen at the London shows where, on so many occasions, the floral riches of Langport have been honoured. The exhibits of Gladioli, in nine cases out of ten, out-distanced those of all competitors, and scarcely less striking were the groups of Delphiniums, Paeonies, and Pyrethrums, so effectively displayed by his son, who has, no doubt, of late years, had the practical management of the flourishing business that is so well known in the horticultural world.

SPRAYING FRUIT TREES IN NOVA SCOTIA COMPARED WITH IN ENGLAND.—*Re* Mr. Jno. Miles' article in the last Journal I ought perhaps to have added that snow is on the ground most of April in Canada, and that Apple foliage and blossoms only open about the last week of May or the beginning of June, after which the growth of plants is very rapid. I am very sorry that any of my remarks should have been misunderstood by Mr. Miles, and that his trees should have had to consequently suffer. The potash solution, $\frac{1}{4}$ to 1 lb. caustic potash to 1 gallon of water, should only be sprayed whilst the tree is perfectly dormant, or used to paint the trunk during summer. For some chemical reason I imagine combined caustic potash and soda appears to have a more burning action than potash alone. The foliage in England will not stand quite as strong a solution of Paris green as in America. I think that Plum foliage is less tender than Apple here and the reverse over there, and that the foliage of young Apple trees is more tender than that of old trees, and of course young leaves are more tender than old. I hope on Thursday, May 24th, at three o'clock, weather permitting, to have a demonstration of work of the "Pomona" spray pump on my farm at Highlands, Swanley, Kent, spraying fruit trees with Paris green and Bordeaux mixture, and an Oat field with copper sulphate to destroy charlock. If any readers of the Journal will favour me by attending I shall be most pleased. Highlands is one mile from Swanley Junction and eighteen miles from London on L.C.D. Railway.—CECIL H. HOOPER.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.		deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
May.										
Sunday ..14	S. S. W.	56.8	52.7	60.7	48.5	0.44	55.9	52.6	49.8	42.6
Monday ..15	W. S. W.	48.9	47.9	50.4	47.5	0.02	54.5	52.8	50.1	46.5
Tuesday 16	W. S. W.	54.7	47.8	59.5	47.3	0.34	54.5	52.9	50.3	41.9
Wed'sday 17	W. S. W.	52.8	47.2	59.9	48.6	—	54.4	52.9	50.3	43.9
Thursday 18	S. S. W.	58.9	54.0	64.0	47.9	—	54.9	53.1	50.5	39.2
Friday ..19	S. S. W.	55.4	51.5	62.2	46.9	0.96	56.3	53.5	50.8	39.9
Saturday 20	W. S. W.	56.9	54.8	62.7	53.5	0.18	56.5	53.9	50.8	47.9
MEANS ..		54.9	50.8	61.3	48.6	Total 1.04	55.3	53.1	50.4	43.1

The weather during the week has been very unsettled and dull, with a thunderstorm on the 16th. Rain fell on five days, the heaviest quantity being on the 14th, which was the greatest fall for any one day this year.

— **GENISTA HISPANICA.**—Though with all the characteristics of the Gorse tribe, to which it belongs, this is far more refined in appearance than the type. Its habit commends it for culture to those who love the cheerful golden blooms of the wildling, yet consider its nature too aggressive for planting in or about shrubberies, or such places where the Spanish variety would be welcomed.

— **EUPHORBIA MELLIFERA.**—Rather a striking plant now in bloom is *Euphorbia mellifera*. As seen recently in the College Gardens, Dublin, it is a shrubby plant well worth having, more, perhaps, from its shapely habit of growth and modest toned blossoms, than from any claims to garishness, which it does not possess. Farther inland it might not possibly prove to be hardy.—K.

— **PARSLEY-LEAVED BLACKBERRY.**—I was pleased with the appreciative note by Mr. Pearson anent this useful fruit which, as he points out, is far ahead of any of the American berries that have been introduced here from time to time. This is doubtless in part due to climatic conditions—not necessarily cold. But the Parsley-leaved Bramble is quite a different thing, and I was reminded of this recently when looking through a small garden at Ipswich where this plant is trained over an arch extending for 20 yards or so over a gravel walk. The owner takes a great quantity of delicious fruit from this annually.—C. H.

— **TOO MUCH RAIN.**—The cry, We are getting too much rain, comes from the trader, the cricketer, the lover of pleasure, and Whitsun holiday maker naturally. I do not think many gardeners will agree with the cry, or farmers either, except those who cultivate very clayey soil. It is not that we are getting a drop too much of moisture, for we know but too well how rapidly under the influence of warm sunshine moisture disappears. But what we want more is rather sunshine and warmth, as because of the lack of it vegetation is late, and moves slowly. But the rains should do the fruit trees great good. They badly needed cleansing, and the roots will benefit by the moisture. These showers should prove a long way more effective than insecticides in cleaning the young leafage, and at no cost. There is plenty of time yet for sunshine, and soon we may be wishing for some more of these refreshing showers.

— **SHIRLEY GARDENERS' ASSOCIATION.**—A monthly meeting of above Society was held at the Parish Room, Shirley, the 15th inst., there being a large attendance of the members presided over by Mr. B. Ladhams. Mr. A. Angell, Ph.D., F.S.I., public analyst for the county of Hants, gave a most interesting and useful lecture on "Sexuality in Plants," illustrated with lantern slides, for many of which the lecturer was indebted to the kindness of Messrs. Sutton & Sons of Reading. A discussion ensued, and several questions were put to the lecturer and answered satisfactorily. A vote of thanks was accorded to Mr. Angell, who, in responding, proposed a vote of thanks to the exhibitors who had brightened the room with a large display that evening. Amongst the exhibits were a group of New Holland flowering plants of special interest exhibited by Messrs. W. H. Rogers & Son, Limited, Red Lodge Nursery, and a group of miscellaneous plants, including five new *Spiræas*, which latter were accorded a first-class certificate; staged by Mr. B. Ladhams, Shirley. A plant of *Medinilla magnifica* was shown by Mr. W. Risbridger, and a very fine plant of *Acalypha hispida* (Sanderi) by Mr. E. J. Wilcox, both of which were awarded certificates.

— **IN A RENTED GARDEN.**—How often do we hear the remark, "What is the good of my doing any gardening here; I only rent this place?" That may be so, but while rented the place is the home of the occupant, and surely there is no good reason why the exterior and the surroundings of a home should not be made beautiful, just as much as is the interior. The inside walls are ornamented with pictures, why not the outside walls with plants, of which a host stands available? The cost of such a thing is trifling; a few hardy shrubs can be purchased for a few shillings, and the pleasure to be derived therefrom cannot be measured by the original cost.—("American Gardening.")

ABOUT MELONS.

THE earliest plants are often quite healthy when the first crop is cut, and by timely attention to encouraging laterals, successional fruits will set whilst the house is kept drier for the ripening. Such will produce excellent Melons in a short time, and though smaller than the first crop, they are frequently higher in quality. In other cases it may be advisable to shorten the old stem to a strong shoot near its base, removing as much of the old soil as can be picked from amongst the roots without injuring them, supplying rather strong lumpy loam pressed well down, and giving a good watering. A moist atmosphere being maintained, and the plants syringed in the morning and about 4 P.M., they will start freely, showing fruit in much less time than by planting afresh. If, however, the plants are affected with canker, or from carrying too heavy a first crop, deficiency of water, or attacks of insects, are much enfeebled, it is better to remove them. Thoroughly cleanse the house after removing the old soil and place fresh sweet compost in ridges or hillocks, planting strong plants when it has warmed through.

Early Melons are coming in and are of excellent flavour, through the days being bright, and the average of temperature considerable. Plants swelling their fruit require a good heat—a night temperature of 70°, though 65° or even 60° will do no harm when the nights are unusually cold and the days bright, 70° to 75° by day being artificially secured, admitting a little air above the latter, allowing an advance to 85° or 90°, closing at 80° to 85°, but so early as to raise the temperature to 90°, 95°, or 100°. Abundant moisture is needed in houses containing young growing plants, also feeding liberally those having their fruits swelling, not allowing them to suffer through deficient supplies of water or of weak liquid manure. Gently damping the foliage, walls, floors, and closing at about 3.30 P.M., or as early as safe, will insure the swelling of the fruits to a good size.

Where the plants are showing blossom fertilise the flowers daily to set the fruit, insuring a dry condition of the atmosphere, and admitting a little air constantly, especially in moist weather, so as to prevent the deposition of moisture on the blossoms. It is also not advisable to use the knife more than can be helped during the setting period, but pinch out the points of the shoots one or two joints beyond the fruit. Earth the plants when the fruit is set and swelling, and examine them frequently for the removal of superfluous growths, not allowing them to interfere with the principal foliage. A slight shade from powerful sun is very beneficial, but it should only be had recourse to for preventing flagging and scorching.

I think, though it may be prejudice, the best flavoured Melons are those produced in pits and frames. The plants appear to be supplied with a steadier temperature and more uniform moisture at the roots, with the constant, though imperceptible, evolving of ammonia and nourishment. Fruits on the earliest plants should be well exposed to the light, but it is not advisable to do so suddenly, as they may be scorched and hardened in the rind, thus spoiled in appearance or made liable to crack. The fruits may be raised on inverted flower pots, with a piece of slate for the fruit to rest on, as the moisture arising from beneath will cause it to decay. Admit air freely, and water only to prevent the foliage flagging.

As a rule early plants in pits and frames will give a second crop of fruit of just the right size for breakfast and luncheon. To secure them encourage four shoots from the base of each plant, so that when the fruit is cut the old growths may be removed and the young shoots substituted. These will show fruit freely on the first laterals, every alternate lateral being rubbed off to prevent overcrowding, and stopping the leaders about 1 foot from the sides of the frame. If a top-dressing of fresh compost be given, supplemented with a judicious supply of moderately weak liquid manure at 90°, the plants will be assisted to make a vigorous second growth.

I find late Melons from frames much appreciated, and useful crops may be obtained by making up beds now of any spent material, which from mixing and turning will generate a gentle warmth, placing frames over it that may have been used for Potatoes and bedding plants. Put in each light a barrowload of rather strong loam, mixed with a fifth part of old mortar rubbish or road scrapings if deficient of grit, and press it down firmly. Into this when warmed turn out a strong healthy plant, making the soil compact about the roots, and giving a good watering. If the weather be bright shade for a few days. There is yet time to raise plants from seed for planting in frames at present occupied by tender bedding or other plants, but the Melons should be placed into their fruiting quarters with as little delay as possible. Plants put in the beds early in June usually do well, as they set the fruit in about six weeks, and in a similar period perfect the crop of luscious fruits.—GROWER.

COMMENTS ON HOME AND FOREIGN FRUIT.

PLANTING—MANURING—PACKING—MARKETING.

AFTER our pages were practically filled for the present issue we received from Mr. George Bunyard a copy of the Society of Arts Journal containing his comprehensive paper on "Fruit Growing in Kent," read on the 10th inst. We were unable to attend the meeting, and as, through a possible oversight, a proof of the matter in type was not sent to us in the customary manner, we could not publish the paper at the time, and as to abridge it would be to spoil it, all we can do now in the space at disposal is to reproduce some comments on it by Mr. W. W. Berry, a well known commercial grower of hardy fruits, and Mr. J. Assbee, the able Superintendent of Covent Garden Market. These indicate the character of the paper and emphasise important subjects.

Mr. BERRY said Mr. Bunyard was a prophet, not without honour, even in his own country, and the tenant farmers and landlords of Kent would always be grateful to him for the pioneer work he had done, for the advice he had given, and for the indomitable perseverance with which he had carried out his experiments over many years.

The question of selection and packing of fruit was all-important. If he had 100 bushels of Apples from a tree, he would rather send 60 per cent. of the best, even if he had to throw away the other 40 per cent., but that was not at all necessary. If you picked out the very best, say 20 per cent., and packed them carefully in boxes, and then took a further 40 or 50 per cent. and packed them carefully in baskets, the returns from those two sections would be greater than from the whole 100 bushels marketed in a careless way; there would be a saving in carriage, in packing, and in other ways, and you would still have 30 to 40 per cent. of sound fruit to deal with, which you could dispose of to the "smasher," as the jam maker or cider maker was termed, at a fairly remunerative price. The same thing would apply to every kind of fruit.

Another improvement was the steam cultivation of the land, not only in clearing old woodlands, but even on some of the best land in Kent, where he would not think of planting fruit trees without first thoroughly ploughing it and stirring the subsoil by steam. He recently broke up 14 acres, first ploughing it 9 to 12 inches deep by steam, and then following the furrows with a powerful steel implement to break up the soil underneath, being careful not to bring the subsoil to the top, but thoroughly breaking it up from 21 to 24 inches deep. The whole cost was not more than £2 per acre, if you hired the implements, and that was quite saved in the cost of planting.

Artificial manure was another important point. Any farmer or fruit grower could now be supplied with exactly the manure his land or crop required, and at a moderate price—either prepared bones, guano, or some of the phosphatic manures which had been referred to. One of the principal reasons for which he would recommend these things in preference to farmyard manure, was the economy in application. Apart from the question of weeds, which was very serious, especially with manure from London, the expense of hauling 20 or 25 tons of farmyard manure on to an acre of fruit land, getting it to the plantation, and then getting it out and in amongst the fruit bushes was enormous, whereas if you had a suitably prepared manure, with the proper quantity of potash, phosphates, and ammonia, it would all go in a one-horse cart and be carried out and sown broadcast on the land for 3s. or 4s. On a large scale that saving alone would make a good living for the fruit grower.

With regard to foreign competition, there had been complaints for twenty-five years, but he thought the time had come to admit that the British fruit grower was largely dependent on the foreign and Colonial produce. In the old days a small quantity of fruit could be sold during the season; there was a shop here and there, and fruit was very dear, and when any unusually large quantity was sent to market there was no one to distribute it. The season then only lasted three or four months, but now we had choice fruit all the year round. There were hundreds of shops, stores, and barrows—fruit was constantly put before the public, who were thus educated to the consumption of it, and insisted on having it, and thus the fruit-grower was far better off than he would have been without the foreign supplies.

Reference had been made to the advantage of fruit and Hop growing in keeping labourers on the soil, which was a matter in which he took great interest. Things were looking up a little in every branch of agriculture, and they wanted more labourers than they did a few years ago, but they could not get them. They were often in great straits for men to do a little extra work which they knew would pay for doing. If you went away from the most prosperous districts, up into the hilly and barren parts, you would find only one in three, or one in six of the cottages occupied, but down where fruit and Hops were grown, and near the towns, there was an enormous dearth of labour. Instead of getting the assistance they used to have from the hill country, when there was any extra work, they could not now find it. In the villages where fruit growing was carried on, there was

work during the winter in pruning, manuring, digging, making new plantations, and so on, and he was paying £1000 in wages now, where £100 was paid when he was young; and a house could not be got for love or money, though five miles away there were empty houses, because there was no work for the men to do. The fruit industry, therefore, was a grand thing, and it must be the same in many other counties.

Fruit was becoming more and more popular every day; it had never been overdone yet, except in one year, 1886, when there was the biggest all-round crop of fruit ever known, and at that time the system of distribution had not developed in proportion. There might be a crop now three times as big as that, and it would all go to market, and the public would get the benefit of it. Enormous quantities of hothouse Grapes and Tomatoes were now produced in this country. Mr. George Monro had given evidence before a Parliamentary Committee that in one year he had sold 700 tons of English-grown hothouse Grapes, in addition to those from the Channel Islands, and more than 1000 tons of Tomatoes.

Mr. J. ASSBEE said it was perfectly true, as the last speaker had said, that it was much better to keep inferior fruit out of the market altogether, than to put it in with the better class. He had repeatedly seen the sale of good Apples entirely spoiled because certain growers thought they could get the better of the public by putting inferior ones in with them. There were two distinct classes of buyers: the man who bought the best and gave the best prices, and the man who bought the worst and only paid the lowest price. If you sent a mixed lot, the good man would not look at it, and consequently the lower class buyer must have it, and he would only take it at his own price, and thus the grower often did not realise the cost of carriage, simply through carelessness and stupidity in packing his goods.

Foreign competition in fruit was like foreign competition in everything else—cereals, hay, straw, eggs, butter, cheese, or poultry. Foreign fruit could not be kept out of the market, and it answered a very useful purpose. No doubt it had stimulated the public taste for fruit; the more fruit people ate the more they liked it. He had often wondered what our forefathers did for fruit; the people generally could have had hardly any. He could remember the time when the only thing you could get in winter was an Orange.

The colonies were making great strides in this direction. Cape Colony had recently come to the fore, and within a decade would be sending fruit here which would be a surprise to many people. But it would come in when the English fruit was over. English Grapes were now just finished, and there would be a good opening for Grapes from the Cape. They had a few this year, but nothing to what would be sent in a year or two. It was the same with Apples, which were just beginning to arrive. Men had gone to the Cape from California, who were laying down hundreds of acres of land in fruit, and they would be sending thousands of packages before many years. But it would do no harm to English fruit, which was equal to anything in the world when well grown and properly sent to market.

Further comments followed, mainly on cider-making and spraying, and Mr. BUNYARD, in reply, said he "strongly recommended that all new orchards should be raised on arable land, except for Cherries, for which he could not advise that course. It was true they did well under it, but if there came a severe frost—anything below 24° of frost—the trees would be completely spoiled; and not only that, but where the ground was very well manured, the Cherry trees ran away altogether. He was called in to advise at a place in Gloucestershire, where they had manured the trees highly, and they made enormous growth, 6 feet in a year, but when they got a hard frost, the trees were completely spoiled. To farm a good Cherry orchard, you must let it go on very slowly. With regard to renovation, if you had good sorts, by all means go in for it: but it was useless to take the trouble if the sort of fruit was not good enough to pay for it. With regard to spraying, he had to be very careful what he said. If he advised people to do this, it might be done carelessly, and very grave results might ensue. He knew of a case where a man washed his Apple trees with London purple, and some of it fell on the Gooseberries, resulting in a vast amount of illness. It was a good thing to use where people were sufficiently careful. A man once said to him, 'I never tell people to do it, but I do it myself;' and that was sometimes his position." Mr. Bunyard was the worthy recipient of a unanimous vote of thanks.

GLOBE ARTICHOKE.—I was interested to learn from a gardener the other day on passing his stock of Globe Artichokes, that the foliage is liberally gathered and used for house decoration. I wonder whether many other gardeners employ the leafage in the same way. The flower heads are esteemed delicacies when properly cooked and served, but certainly they do not constitute a popular dish. But the use of the leafage, which is finely formed and noble in appearance, for domestic decoration seems novel. Those who would like to have such will find strong plants to produce it in great abundance.—A. D.



ODONTOGLOSSUM CRISPUM—PURITY AND RAYMOND CRAWSHAY.

THOUGH there were not great numbers of Orchids at the Drill Hall on Tuesday, May 16th, several *Odontoglossums* were shown that were decidedly above the average for quality. Two of these we now reproduce—namely, *Purity* (fig. 94) and *Raymond Crawshay* (fig. 95). The latter is of beautifully rounded form, with sepals and petals of much substance. The colour is white, clouded with rose purple, and with large chocolate blotches. It was exhibited by de Barri Crawshay, Esq., Rosefield, Sevenoaks. *Purity*, as the name implies, is white, save for the slightest rose flushing in the sepals and the yellow on the base of the lip. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was the exhibitor. Each variety received an award of merit from the Orchid Committee of the Royal Horticultural Society.

CATTLEYA CITRINA.

I AM greatly indebted to the Rev. F. D. Horner, and so I am sure are many of the Orchid-growing readers of the *Journal*, for his very interesting and instructive note (page 381) on this beautiful species. I had hoped that more correspondents would have given us their experience with it, and waited a little in expectation, but this is a busy time of year, and as our Editor recently pointed out, those who are most expert in growing are not always the most expert with the pen, and *vice versa*. Let us hope that later, when the press of work is over, our Orchid readers will give us their experience with this and other "miffy" kinds. The rev. gentleman's experience with *C. citrina* is another instance of successful cultivation following close and careful observation and the adoption of cultural methods to suit the natural habit, likes, and dislikes of individual species.

DENDROBIUM TAURINUM.

Though known and admired for upwards of half a century, this singular *Dendrobium* is as far from being understood as ever, and only on very rare occasions are really well-cultivated plants met with. Unlike many other species that are difficult to do, it does not grow really strongly, even when first imported, and it has become an understood fact that if the plants do not take a good hold during the first season, they are very unlikely to do so at all. When strong, the newly imported stems are a yard and more in height, but such are rarely produced under cultivation. They are quite erect, and the flowers occur at or near the top of these, in many-flowered racemes.

The long twisted petals are brown and purple, the sepals greenish-white, while the lip has raised lines of brown upon a rosy purple ground colour. The lip and petals have been likened to the face and horns of a bull, hence the specific name. The only house it is likely to succeed in is a hot, moist, and exceptionally light one, and during the period of the greatest root activity a large amount of water must be given. It is better not to attempt any drying off, though when the growth is made the plants are better for a short rest. Unless ample moisture is always present when growth is active, insects, and especially thrips, are sure to attack it, and healthy growth will be out of the question.

DENDROBIUM CRETACEUM.

Though not so showy as others in this section the flowers of this species are interesting and pretty, and it is worth a place where a representative collection is aimed at. The pseudo-bulbs are stout, less than a foot high; the blossoms occur at the sides of these, and are milk white excepting the centre of the lip, which is yellow with streaks of crimson. It is best grown in baskets, not far from the roof-glass in the warmest house, well watered during the growing season, but kept cool and dry in autumn and early winter. It is a native of large tracts of country in Northern India and Assam, and was introduced in 1846.

AERIDES NOBILE.

In this fine species the racemes are much larger than in *A. odoratum*, from which it is also distinct in habit and quite a superior

plant in every way. It is questionable in fact if the genus contains a finer species, strong growing and flowering abundantly, the blossoms emitting a delicious fragrance all the time they are open. To get the best results large specimens should be grown and given ample head and elbow room in large baskets and a rough compost of sphagnum and charcoal. So treated we have had it a yard high and as much through with scores of its lovely flower spikes.

DENDROBIUM JENKINSI.

This pretty little *Dendrobium* blossoms much more freely in an intermediate temperature than when exposed to strong heat, and will usually be satisfactory when well established on rough blocks of Apple or other hard enduring wood. The small size of the pseudo-bulbs and leaves prevents anything like severe drying off being practised; but unless it obtains its proper rest it will not flower freely, and this is best accomplished by removing to a cooler house in autumn. The blossoms are orange yellow, with a deeper tint upon the downy lip. It is named after a Captain Jenkins, who sent it home from Assam in 1836.—H. R. R.

EVAPORATED VEGETABLES.

THE factory of the British Preserving Company at Rayne stands on a plateau about 200 feet above the sea, on the edge of the London clay, in the county of Essex, upon a gravel bed 25 feet in thickness, overlaying a bed of clean, sharp sand, bearing ample water of exceptionally good quality, though very hard. In the erection of the factory great attention was paid to the sanitary arrangements and the comfort of the workers, most of whom are young women. The main hall is about 80 by 30, and at one end is the engine and boiler room, at the other the kitchen or copper room, with store room and the workpeople's rooms beyond. On the north side runs an annex, in which are various bags for receipt and storage of the raw material and for sundry subsidiary processes. Outside there is a forge, a tin shop, and a large shed for baskets, mats, and sacks, which take much room. The most scrupulous cleanliness must be

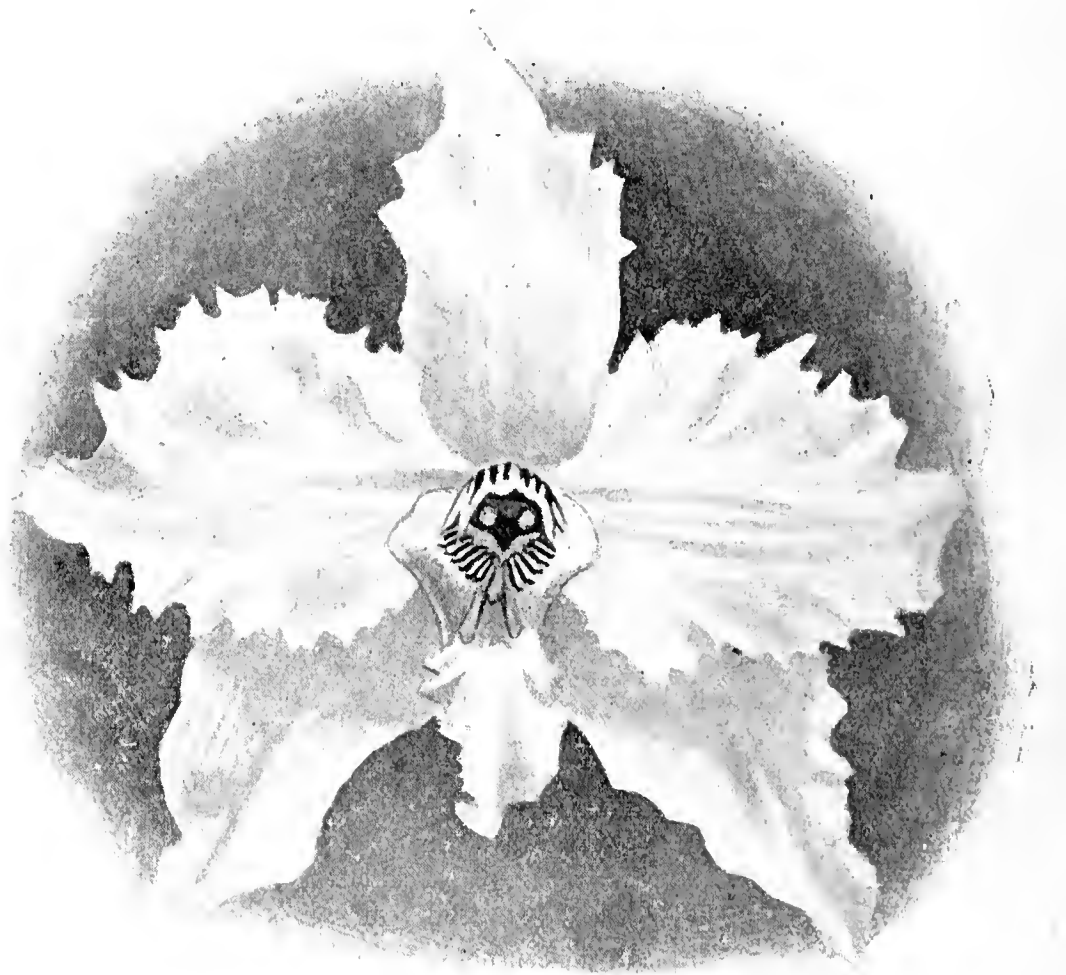


FIG. 94.—ODONTOGLOSSUM CRISPUM PURITY.

observed. The concreted floor of the main hall is channelled, and laid so that the constant flushings of water pass readily away.

The main feature of the large hall (apart from the shafting and numerous machines connected to it by belting, which first catch the eye) is what is called the drying canal. This runs along one side of the building, and has the appearance of an exaggerated wooden counter. Its internal dimension is about 4 feet square, and throughout its length is laid a small tram line, along which run the waggons containing ten or twelve perforated zinc shelves for the prepared vegetables. Outside the canal runs a similar tram line by which the waggons, having traversed the canal, are returned to the end to be again filled and passed through. A hot blast is driven into the canal by a powerful fan, and rapidly takes

up the moisture of the vegetables, so much so that at the further end an exhaust fan with a high number of revolutions is required to extract the moisture-laden air and expel it through an upcast shaft.

The amount of moisture extracted from vegetables differs largely in various kinds, Onions being reduced to about one-tenth of their original weight, and other vegetables to a less extent. The time and the degree of heat required by each also largely differ, and in the knowledge of this lies much of the success of the process. When the vegetables leave the canal the slices are crisp as biscuit, and a slight reabsorption of atmospheric moisture must take place before they are ready for compressing and packing. For this purpose they are spread on a wooden floor, and here again experience is needful in order to seize the proper moment. It is claimed that all the natural and essential qualities of the vegetables are retained without any diminution by this process.

Having described the most important part first, we will now rapidly follow the process of preparation. Down the middle of the room are tables at which the girls stand, each with two baskets on the floor, one on either side. On the table or beneath it are the various small machines for peeling or slicing, most of them very ingenious. The idea of peeling Potatoes in a lathe strikes most people as ludicrous, but it is true. Larger machines for washing Potatoes, Carrots, Onions, and other kinds by rotatory action, and slicing them, stand round the walls, while a notable Pea-shelling and sorting machine of large dimensions makes a sort of centre. Steam-heated plunging tanks occupy one corner, and large butts of cold water another. The machinery in the conserving room is of the newest description, but being commonly used in this country needs no description. It may be well to state here that the vegetables prepared at Rayne are absolutely free from chemicals, and have passed the Government analyst as perfectly pure.

The principal feature of successfully evaporating vegetables is to wholly extract the water without burning or drying up the fibres and tissues that are in them, otherwise the vegetables will not thoroughly re-hydrate again or reassume almost their normal size, while no matter how properly and carefully they are cooked they will be harsh and flavourless, and lose their natural aroma and colour. When properly evaporated each vegetable should retain its own peculiar aroma, essential oil, strength, goodness, colour, and flavour.

Almost every kind of vegetable and herb is capable of being preserved by an evaporating process, and if care be taken to get rid of the moisture contained in them they will keep for an indefinite period in any climate, so long as they are kept covered in a tin box, so as to prevent their absorbing the moisture contained in the air. Radishes, Lettuce, Watercress, and such like crisp vegetables cannot be done successfully, because it is impossible by re-hydrating to get back their natural crispness, which is their leading characteristic.

The time required for the drying process is from two hours and a half to four hours, starting from a gradual heat up to 45° to 75° Celsius, such heats varying according to the vegetable dealt with. It is inadvisable, as also almost impossible, to lay down a fixed rule as to the temperature required, as the condition of the vegetable, whether a wet or dry season, its growth, and even the soil upon which grown, have to be taken into consideration.

The process of evaporation does not in any way alter the condition of the vegetable so treated either in making it fresher or staler. Fresh vegetables will come out from the process fresh, and stale vegetables cannot be altered, but will come out stale. The best time to put the vegetables through the process is when they are at their full growth and their nutritive qualities at the highest point. Vegetables grown on sewage farms or on very highly manured market gardens are not the best for the factory, as in both cases they contain a much higher percentage of water than those grown on less quickly forcing soil, and it is an open question as to whether they would have such good keeping qualities when grown on the former as on the latter. At the same time it is important to avoid using vegetables that are grown on poor soil, which consequently are a long time growing, and must be necessarily coarse and spongy, in the case of roots and such like, and stringy and tough in the case of Cabbage.

By the evaporation process, all classes of vegetables as they come in season may be preserved and used for culinary purposes, irrespective of seasons, so that Carrots, Turnips, Parsnips, and Onions, these forming perhaps the most useful, may be obtained all the year round in their full nutritious condition and at reasonable prices. Under the old order of things during the months from April to September it is very difficult and expensive to obtain such from natural sources.

When needed for use evaporated vegetables require soaking in water for from two to six hours, according to the sort. After soaking they may be cooked in the same way as ordinary fresh vegetables of a similar nature. Vegetables required for soups need not be soaked so long as those for the vegetable dish. By adopting a sound and proper process of evaporation, and by taking great care for the cleanliness of all the surroundings and quickness in dealing with the produce from the first commencement of the process, which is the peeling, to the last, which is the pressing and packing, the colour of each vegetable and its own natural aroma and qualities may be retained without the use of any colouring matter or chemicals.

For army, navy, and colonial use, where vegetables are scarce or impossible to obtain, evaporated vegetables form a splendid substitute for the original article, and beyond question hold their own far beyond any tinned substitute, both in flavour and quality, while they are certainly much cheaper comparing solids with solids, and very much easier to

handle. By hydraulic pressure, which in no way injures them or militates against their value, it is possible to confine a large quantity of evaporated vegetables in a very small compass, which very materially lessens the cost of transport both by land and sea.

As an aid to agriculture, which is still the largest industry in the United Kingdom, the evaporation business will require a little time to firmly seat itself, but as to its ultimate success, an object lesson may be learnt from France, Germany, and America, the two former for vegetables and the latter for fruit. France was the originator of evaporated vegetables, which were first used prominently by them in the Crimean war in the feeding of their soldiers. Since the Franco-Prussian war, Germany has made very great strides in their manufacture, so that now in that country and in France, factories for evaporating vegetables may be reckoned by the score.

Dried vegetables may be seen and bought in most of the grocers' shops on the Continent, as they have now become universally used by the householders of the great cities and towns. For cheapness, saving of time and trouble in peeling and preparing, for doing away with the



FIG. 95.—ODONTOGLOSSUM CRISPUM RAYMOND CRAWSHAY.

nuisance of the peelings and garbage stored in or near the house, evaporated vegetables should be extensively used in London and all great centres of people.

The gold medal and diploma of honour were awarded to the Rayne vegetables at the Universal Food and Cookery Exhibition held at the Imperial Institute in March last, where they were extensively used in the practical demonstrations.—(*Paper read by MR. R. GORTON SALMOND at the Horticultural Club.*)

ROYAL HORTICULTURAL SOCIETY.

THE TEMPLE FLOWER SHOW, MAY 31ST, JUNE 1ST AND 2ND.

FOR the twelfth year in succession the Royal Horticultural Society will hold its great annual flower show in the Inner Temple Gardens (by the kind permission of the Treasurer and Benchers) on May 31st, June 1st and 2nd. Every year the desire of growers to exhibit increases, and the officials of the Society have a very anxious task in endeavouring to do justice to those growers who regularly support the fortnightly shows of the Society held at the Drill Hall, and yet at the same time to encourage others also to come forward. The space is absolutely limited by order of the Temple authorities; no more, or larger, tents may be erected. Hence every new exhibitor whose entry is accepted means curtailment of the space allotted to previous supporters.

A catalogue of the Show is given gratis to every visitor, and will contain a notice of new and rare plants entered on or before May 23rd; it will also contain a programme of the music to be performed each day by the band of her Majesty's Royal Horse Guards (Blues). The Judges will meet at the Secretary's tent at 10.30 A.M. on May 31st, at which hour punctually the tents will be cleared of all exhibitors and their assistants. The Fruit, Floral, and Orchid Committees will assemble at the Secretary's tent at 11 A.M. sharp, and the Show will be opened at 12.30. All plants for certificate must be entered on or before Friday, May 26th; address—The Secretary, R.H.S., 117, Victoria Street, S.W.; they cannot be entered under any circumstances on the day of the Show.

BERBERIS STENOPHYLLA.

I WAS glad to see the note by "B. S. E." about this fine species, because it is undoubtedly one of the hardiest and most ornamental of the evergreen spring-flowering shrubs. Just now it is at its best everywhere in all sorts of situations, soils, and aspects. Whether planted singly or in masses, it is equally effective, single specimens putting forth long, curved, graceful growths, which, when laden with the light yellow flowers, is very striking, especially so as I saw it recently near Matlock, on a steep bank above a path with the branches high above.

On the 9th of this month I saw a glorious mass of it in a large circular clump near the flagstaff in Kew Gardens, and my wife called my attention to its sweet perfume, which I had not noticed particularly before, and which I found delightful on going to the windward side of the clump, which is several yards in diameter. I saw other clumps of different varieties of Broom and of double Gorse in full bloom in the gardens, but none of them impressed me so favourably as did this Berberis.

It also answers well for a rockery where the crags are large and the planting has to be bold in character. In such a situation the growth spreads over the rocks on every side, and is sufficiently prominent to stand out as a pleasant feature in perfect harmony with the whole scene. As a clothing for walls in exposed situations both it and *Darwini* are invaluable, and as a garden hedge it is thoroughly efficient as a barrier, and is so ornamental as to merit special attention, and induce the inquiry, What is it? A friend of mine has a hedge of it which is now entirely satisfactory. It looks likely to continue useful for a lifetime; it bears clipping well, and has a very neat trim appearance.

I have been told that it is a seedling from *Berberis Darwini*, and that it originated at Messrs. James Smith & Son's nursery at Darley Dale.—EDWARD LUCKHURST.

CULTURE OF CELOSIAS.

FOR the decoration of greenhouses or conservatories during the late summer and autumn months *Celosias pyramidalis aurea* and *coccinea* are enduring and beautiful, and are well deserving extensive culture. The habit is pyramidal, branched or feathery, and the height depends upon the culture. High culture encourages plants $2\frac{1}{2}$ to 3 or 4 feet in height; small pots and high feeding produces very much dwarfier plants; and starving treatment results in smaller plants which not infrequently, from their fine feathery habit, are fully as useful as those which have been more liberally treated. The varieties vary considerably in the mode of growth, though the pyramidal form is maintained in most plants, but some branch very near the base and are grandly feathery to the summit, the branchlets arching over with much grace and elegance. These are the most beautiful.

The tasselled forms are heavier in appearance, being a combination of coarse feathers and small cockscombs. In colour, too, they also vary considerably, pink, rose, crimson, scarlet, orange, yellow, and all the various shades of those colours. Some plants in a young state are apt to show a small comb, and the impression is given that the strain is a bad one, and under the impulse of the moment the plants are thrown away. That is too hasty judgment. *Celosia pyramidalis* is a broken Cockscomb, and a premature comb is not an evidence of bad strain, but we can hardly say it shows a good one. The plants have a tendency to revert after the removal of the heart comb to the comb form. These combs whenever exhibited should be removed, and this will throw more vigour into the feathery parts, causing fine-habited plants and a denser and more compact growth; in fact, judicious and early stopping (confining it, however, to the strong side shoots, and to the upper part so as to preserve the pyramidal form) is essential to freedom of comb, and to produce elegant feathery plants.

SOWING THE SEED.

The culture required is exceedingly simple. From the middle of April to the middle of May is a suitable time to sow the seed, and from those sown early in June I have seen plants surpassing in beauty and freshness for autumn decoration those sown at an earlier period of the year. The seeds require to be sown rather thinly in light moderately rich soil, and should be covered about an eighth of an inch deep. The pots ought to be placed in a hotbed having bottom heat of about 75° , and top heat of 65° to 75° , with a rise from sun heat and air. The seedlings require to have the soil moist, and yet if kept very wet they are liable to damp. It is important they be kept near the glass and be well ventilated, so as to induce sturdy growth.

When the plants have two or three leaves in addition to the seed leaves they should be potted singly in small pots, and not deeper than the first leaves, returning them to the hotbed and shading for a few days. The plants should be kept regularly moist, but still must not be over-watered. Transfer the plants into larger pots as they fill with roots, potting rather firmly. The last shift may be into 9-inch pots, which are sufficiently large for the largest specimens, and at this move the drainage should be liberal, whilst for the others moderate drainage will suffice. The plants, when too tall for a frame, can be removed to a light house or pit, near the glass with light on all sides.

WATERING.

No artificial heat will be needed provided the temperature, by moderate air-giving, be kept up so as to be that of a cool stove. The

plants are the better for light sprinklings morning and evening and the floors and other surfaces kept moist. Liquid manure may be given at every alternate watering after the pots are filled with roots. Plants so grown will be tall and very effective for conservatory decoration. After they are fully developed they require to be carefully watered or they will decay at the stem. If kept very dry the foliage becomes yellow, therefore water only to keep from flagging. The plants will remain in good condition for many weeks.

If dwarf plants are required it is necessary to keep them in small pots, standing upon boards or slates so that they do not root through into the hotbed; liquid manure may be given at every alternate watering and the plants kept near the glass. The soil in potting should be made very firm, and the shifts only two—i.e. from 3-inch to $4\frac{1}{2}$ -inch, and from the latter to 6-inch pots, the sides of the balls at each potting being loosened so as to remove part of the close matting of the fibres. Shade for a few days after potting, as the plants from the loss of fibres would otherwise flag and the foliage suffer. The drainage at the last potting should be liberal, and in all cases it is better to use half-inch bones than crocks. Light turfy loam three parts and one part of old cow manure, well mixed and broken up fine, will grow them perfectly.—PRACTICE.

CHISWICK NOTES.

WALKING through the great vinery at Chiswick the other day, I noticed how very regularly the Vine rods on each side, but especially on the warm side, where growth was more advanced, had broken from bottom to top, and just as well close down as at any point. Yet these rods run up very nearly vertical to a height of some 25 feet. This fact serves to show that if rods be slowly elongated to insure a good break on each section of new wood, that breaks always come year after year from the spurs without artificial aid.

There is a fine set of Peaches and Apricots on the half-standards in the lean-to Peach house, and although these are trying to lift the roof higher, yet they do not prevent the trees on the back wall from setting a fair crop also. The trees now badly need a loftier house, and one should be furnished for them; the house being then planted in single line along the front, so that the trees may be trained over a low curvilinear trellis, as it is best suited for such method of culture. Each of the standard trees is so large that it carries some fifty fruits, and yet very thinly placed. The trees would well repay tucking, and having a large house to shelter them. It is interesting to note that one of the old and early vineries is still heated by a brick flue. The house contains Black Hamburgh only, and will give a capital crop of bunches.

There is, for the delectation of those Fellows who like them, a fine collection of hardy alpine still in pots, whilst of tender plants a very large quantity has been sent out, and propagation by cuttings and seed raising is in progress to secure stocks for another year. Quite a nice collection of *Caladiums* has recently been secured, but these are hardly likely to meet a popular demand. Still their leafage is very beautiful, of that there can be no doubt, and admirers of it are not lacking.

Trials.—There is being made this year provision for ample work for the Fruit and Floral Committees, and interest in Chiswick will not be on that ground at all lacking. For the first-named Committee there is a very extensive collection of Peas again, for raisers of Peas seem to be irrepressible, and will not cease from their labours. It will be interesting later to see what mountains they bring forth.

Then there is already well up a big stock of Potatoes, the majority being new; a very extensive trial of Dwarf Kidney Beans, recently sown, the varieties so far as possible having been grouped according to the colours of the seeds. There is a good trial of Tomatoes in two houses. In the first the plants are about 20 inches in height, very stout and sturdy, and carrying bloom. These comprise about twelve picked varieties, and about ten plants of each. In another house is a later collection, two plants of each variety; and in yet a third house there is that beautiful golden Peach, sport from the old red Peach variety, which proved to be of such delicious flavour at Chiswick last year. Strawberries should also offer a very interesting trial this season, as both one and two-year-old plants are vigorous.

The hardy fruits on tree and bush will also be well worthy of examination. Plums seem to show a capital set. For the Floral Committee there will be numerous useful flowering stocks to overlook. *Pelargoniums*, *Carnations*, *Pæonies*, *Dahlias*, *Chrysanthemums*, *Violas*, and other things will keep that body usefully engaged. It is not well to undertake too many things in one season, but to do what is on trial well. That is Mr. Wright's object, and it is hoped the season will be of a nature to favour his efforts, as without doubt these Chiswick trials are regarded widely with singular interest.

Cauliflowers.—Various members of the Brassica family, but Cauliflowers chiefly, have been grown in considerable quantity at Chiswick to constitute a trial in those gardens during the coming summer. All varieties, sown at the same time, treated alike by being pricked from the seed pans out into frames thinly, and thus helped to grow strongly, so that from a good batch of each representative plants may be obtained to plant out later. It is so much better in trials of this nature to have many more plants than may be needed, as then it is easier to discern how far stocks come true to character or otherwise. There seem to be numerous stocks. The Chiswick soil is none too tenacious for Cauliflowers, but no doubt if fairly compressed and the summer be drippy there will be a good trial.—A. D.

PROGRESS IN FRUIT PRODUCTION.

(Concluded from page 381.)

STRAWBERRY GROWING IN HAMPSHIRE.

"HAMPSHIRE is one of the few counties in which the area of small fruit exceeds that of orchards, the former being returned at 2209 acres, and the latter at 1986 acres. Moreover, the small fruit area increased from 746 acres in 1888 to the extent given above for 1898. This increase is in great part owing to the expansion of the Strawberry fields of the Southampton district. Mr David Cowan, Director of Technical Education to the Hampshire County Council, informs me that about 7000 tons of Strawberries were sent from this district to London last year. Botley and Sarisbury are two of the parishes in which the fruit is extensively cultivated. Mr. Thomas Spencer of Sarisbury is one of the largest growers. About five-sixths of the Strawberry holdings are from $\frac{1}{2}$ acre to 5 acres in extent, a few from 5 to 10 acres, still fewer from 10 to 20 acres, and only four or five over 20 acres, with 35 acres as the maximum. Five years ago about 90 per cent. of the Strawberries were Paxtons, and about 10 per cent. Nobles; but now Royal Sovereigns are superseding Nobles, and in some measure are taking the place of Paxtons. Picking usually begins in the district about ten days earlier than in Kent—in some seasons as early as June 1st, but in others not before June 15th. Nearly all the first week's gathering goes to London; but afterwards three fourths of the Strawberries are sent direct to the midlands, Scotland, and Ireland. The freight to London is a little over 2s. 3d. per cwt., that charge being made on eighteen baskets holding a gallon each, averaging $5\frac{1}{2}$ lbs.

FRUIT IN DEVON, CORNWALL, AND BEDFORDSHIRE.

"Although Devon is the greatest orchard county in England, the extent of commercial fruit plantations, in comparison with that of cider orchards, is small. In South Devon, however, a considerable acreage of Apples, Pears, and Plums is grown for local and outside markets. Strawberries are grown extensively in the Exeter district. The largest market garden in Cornwall belongs to Mr. Frank Craze, who once grew 10 tons of Hesse Pears on an acre, besides bottom fruit, and sold them at only £4 a ton. In another season he grew only 4 tons, and sold the fruit at £16 a ton. The smaller crop not only gave the higher returns, but was much less expensive to pick and market. Liverpool and Leicester are the chief markets for the produce of the market-garden farm, as Mr. Craze has brothers there who are salesmen.

"No more interesting visit has been made in all my wanderings than one which was paid to the Experimental Fruit Farm at Ridgmont, near Woburn. It was established by the Duke of Bedford in June, 1894, with the valuable assistance of Mr. Spencer Pickering, F.R.S., who still acts as scientific director, while Mr. R. L. Castle is the highly capable superintendent of the practical work, carrying out the experiments and recording their results. The farm is 20 acres in extent. The soil is a heavy one, over a clay subsoil, but Apples do remarkably well on it, and Plums fairly, while Pears grow satisfactorily, though the soil is too cold to suit them thoroughly. More time is needed for fully testing experiments with the larger fruits, but it has been found that farmyard has proved much more effectual as a dressing for Gooseberries, Black Currants, and Raspberries than equivalent quantities of superphosphate, sulphate of potash, and sulphate of magnesia, mixed, and nitrate of soda applied separately; but in all cases the manured plots were superior to those which had no manure. In a bed of ninety varieties of Strawberries the fruit decreased in size after the second year from planting, and the decrease has been continuous since. Royal Sovereign and Paxton have done best at Ridgmont, though British Queen has also flourished. Superlative has proved the best Raspberry, Black Naples the best Black Currant, and much less liable to the mite than Baldwin. Whinham's Industry the heaviest cropper among Gooseberries, and Rivers's Early Prolific the most fruitful of Plums. An excellent shelter fence of American Crabs deserves notice, as the fruit makes delicious jam. It is now 12 feet high, but is to be cut back to some extent. The land of the experimental farm is kept admirably clean, and the management throughout appears to be excellent. Fruit growers all over the world have reason to thank the Duke of Bedford for founding and maintaining a trial farm, which has already taught many valuable lessons, and is certain to teach more in the future."

[Though the citations in our issues of April 13th, 20th, and May 11th, with those now published, appear copious, they in reality only represent in a very small way the result of their author's persistent and successful search for information on the important subject that he has investigated so thoroughly. He publishes information from many other districts, but not on the 1000 acres of fruit plantations established by Lord Sudely, because the manager informed him, that as "visitors are not asked to publish an account of what they see on the great fruit farm, it was obviously useless to inspect it." That is Mr. Bear all over—frank and practical. He has executed his commission well, and

persons who are specially interested in commercial fruit production who may desire to see the whole of his report will find it in the last quarterly issue (March) of the Journal above mentioned. It is published by Mr. John Murray, Albemarle Street, London, price 3s. 6d.]

DAFFODILS IN MIDLOTHIAN.

"FIELDS of waving gold!" Beautiful! Entrancing! Enough to stir to ecstasy the most torpid imagination! But "it's a far cry" from Perthshire or East Lothian to Long Ditton, and for the actual vision of the average Scot the golden fields of the Messrs. Barr might wave and shimmer in vain. So conferred the writer and two friends who kept "tryst" on a recent Saturday at Waverley Station, Edinburgh. The day was piercingly cold, and the rain almost "slanted" not before the baffled wind." Still, enthusiasm defied the unkindly elements; off they set, and in time the quietly-jogging N.B.Ry. landed them at Penicuik, their destination, when a few minutes found them in the gardens of C. W. Cowan, Esq., at Valleyfield, which may well take position as the Mecca of the northern Daffodil devotee. The "Daffs" were there, cowering and quivering in the biting east wind and the pitiless rain, and the three pilgrims shivered in sympathy. Under overcoat and umbrella fully an hour was spent, and enough was seen to require only the quiet courtesy of Mr. Cowan to lay the foundation for a future visit. The following Saturday, therefore, found the trio again in Valleyfield, where now the Daffodils smiled and nodded welcome in the bright sunshine, though yet bitter nor'easter.

And what of Valleyfield and its treasures? Everything seems to be there in the way of Daffodils, and Daffodils everywhere. "Daffs" in the grass, under fruit bushes to test their alleged "fighting" qualities, in specially prepared beds, in the ordinary garden soil, in sunshine and in shade, everything to meet their wants, and the very air seems surcharged with the germs of the "yellow fever." So those that have any natural tendency to such affection had better avoid Valleyfield, or make up their minds to be caught.

Writing so far from memory, I may slightly err in locating some of the lots selected for mention. The first sample prepared us for anything to follow. Half a dozen Monarch, big in size and in price: three dozen at least of the chastely beautiful Madame de Graaff; a large number of Madame Plomp; Glory of Leiden in quantity; Nelsoni aurantius, with its striking cup, are a few examples culled from a bed detached, raised, and specially prepared. Still, there they looked not a whit happier than their comrades in the garden.

This fine corps reviewed, attention is now drawn to several large beds at a little distance. Here all the sections are fully represented, and it is difficult to decide with which to begin. But a batch of several hundreds of Leedsi Duchess of Westminster commands notice; Gem, with its beautiful form and pale lemon cup; the favourite Katherine Spurrell; Minnie Hume, one of the best, with its pale wide cup; and Grand Duchess, a very striking flower, with cup stained orange, may be selected as fine examples of their class.

Of the Bari section, Sensation at once catches the eye, with its pure white perianth and scarlet edged cup; the rarer Crown Prince, with cup stained scarlet; lovely Flora Wilson; and, of course, conspicuous, a universal favourite.

Dozens of Incomparabilis C. J. Backhouse, with long orange-scarlet cup; James Bateman, of exquisite form; Mabel Cowan, smaller than the preceding, but not less beautiful; lots of Queen Sophia; the more costly Lulworth, in perfect form; and Gloria Mundi, not yet often seen, its large and deeply orange-scarlet stained cup contrasting finely with the pure yellow perianth, may be noted as a small selection. Here also is Lady Watkin, as yet in few hands, and apparently not of robust growth.

The Nelsoni section is complete, every member present. Besides aurantius, already noticed, Mrs. Backhouse, with large yellow cup, and Stanley, smaller, but not less attractive, with fine yellow cup and pure white perianth, were noted. Is any member of this class lovelier than the more common Nelsoni major, accessible, too, as it is to the ordinary purse?

Coming to the Burbidgei division, Crown Prince, a charmingly pure flower, with cup of light yellow and orange edge; Ellen Barr, somewhat similar, and a worthy companion to His Royal Highness the Prince, and St. John's Beauty, of peculiar ridgy perianth, with cup of sulphur, frilled and scarlet edged, could not be passed.

And now we come to a remarkable company, a gathering of stalwart knights and fair dames of surpassing beauty. Mark a good dozen of that fine flower Captain Nelson, one of the most desirable, but still somewhat high in price, of great refinement and superb form. The Captain leads a notable corps of both sexes. A large batch of the dapper J. B. M. Camm, evidently in high favour, with Mr. Cowan beside him, following somewhat later Miss J. B. M., a sweetly mated pair, of relative size, not unusual in actual life; and the charming Mrs. Walter Ware, of highest purity, both in the white perianth and golden trumpet, are there in numbers. Let sweet Corrie Plomp follow—perhaps she ought to precede

them all—a flower with perianth of purest white, and trumpet primrose somewhat like that of Grandis in form, a bloom to haunt the memory when first seen. Apricot, more curious than beautiful; Golden Nugget, well named; Lady Helen Vincent, a perfect harmony in colour, and of grand form; Lord Aberdeen, a strikingly commanding bloom, with rich golden trumpet; Mrs. Morland Crosfield, perhaps the finest of all, the perianth of pure white, the trumpet pure yellow, large and bold: Victoria, fortunately of reasonable price, with erect carriage that well displays her exquisite properties of broad, creamy perianth and large golden trumpet; Primrose Dame, a beautiful self-coloured bloom, also attainable to ordinary means, swell the grand group. Shakespere, as he well merits, towers high in this goodly company, and, next to Corrie Plomp and Mrs. Crosfield, most charmed his three interviewers. To bring up the rear, but foremost, in size at least, comes Weardale Perfection, of which (it may seem an instance of the proverbial sour Grapes) the remark may be made that the flower is immense and the price forbiddingly high.

In grass were noted Emperor, Horsefieldi, Sir Watkin (and breaks of all three, in the garden, of some 40 yards long by at least 2 broad), Johnstoni Queen of Spain, and moschatus of Haworth, the last in smaller numbers. Mr. Cowan also showed his visitors a bloom of Johnstoni Mrs. George Cannell with elegantly reflexed trumpet, a variety not often met with. The foregoing are a few selections from the "Daffs" at Valleyfield.

And now one wonders that, from such a collection, while he comes away satisfied that he could see nothing more or have been more highly gratified elsewhere, there remains the sense of completeness rather than of vast extent. Perhaps that is owing to the compact system of planting at Valleyfield, the whole stock being lifted annually, and, while there is not the very slightest appearance of crowding, the plants are close and the ground fully occupied.

After hours of pure enjoyment among the Daffs, and a call a mile or two off in pursuit of Auriculas, three gratified, if somewhat exhausted men, parted in Auld Reekie, full of the delights of their visit, with a sense of deep obligation to Mr. Cowan for his genial reception of the wanderers, and the kind attention of Mr. Shillington, his gardener. A missed train connection entailed on the writer an additional six miles' walk to reach home, but in the gathering gloom of night bright reflections on and from Valleyfield seemed to brighten and shorten the way.—A NORTHERN AMATEUR.

KENTISH FRUIT PROSPECTS.

AFTER a fortnight's splendid weather from a fruit grower's point of view, much of the backwardness, so apparent three weeks ago, may be considered a thing of the past. All kinds of fruit have made grand progress, and if we can only get through the next few days without frost a full fruit crop is practically a certainty. Raspberries and Strawberries are perhaps the slowest to respond to the genial climatic conditions; they have not been looking well all the late winter or early spring, and many pieces now are looking slack and unhealthy. Wireworm is unusually prevalent this season, and they are responsible for much of the damage to Strawberries. Rape cake applied as a manure, say twice from Christmas to April, is about as good a preventive for wireworm as any. An extra coat of manure of any kind is good practice under these conditions. It helps the plant to grow away from its enemies.

Raspberries are suffering from the after effects of one or two extremely dry summers, and also from attacks of the weevil peculiar to them. These weevils can only be destroyed with one wash—viz., Paris green—and the application is rendered very difficult from the fact that unless the wash is made of sufficient strength to almost do harm to the foliage the insects cannot be killed. If the acreage to be sprayed is not too large a good plan is to start washing at, say, four to five o'clock in the afternoon, keeping on as long as one can see. In this way the risk of burning the foliage is reduced to a minimum, as it is the effect of the sun immediately after the wash is put on that causes the mischief. The Raspberry weevil is very hard to thoroughly get rid of. A great many fields have been condemned almost solely from this cause; but if the arsenical washes are used as strong as possible, and often enough, they are to be cured. Raspberries are very gross feeders, and it is always well to increase the quantities of manure applied when anything goes wrong.

Now is the time growers should watch their Damson and Plum trees for aphids. The same things will come on Black Currants too, and, unless they are caught in the first stages, the washings to get rid of them have to be on a much larger scale. Damsons are painfully subject to these pests, and where a grower has a good stock, looking as if the fruit will hang thickly, it would be by no means lost money to wash them, waiting till the showery days are over, during the next week or so, whether they apparently wanted it or not.

Under the influence of the beautiful weather, Apples, Cob Nuts, and the fruits that generally suffer from the winter moth caterpillar, are coming along at such a rate that the caterpillars do not seem to be any trouble to them. Should the warm weather continue, no more spraying will be necessary; but directly the wind goes east—for, say, a week at a time, and it often goes there for longer than that in May—another washing will be certain to do good, if it is not absolutely necessary. Cultivation is in a very forward state. The occasional showers have made land work easily, and yet there has been sufficient dry weather to kill weeds.

As remarked above, prospects for a good crop of fruit are encouraging, and I would urge growers to remember their trees and bushes in the

matter of a little manurial help where they give promise of being heavily laden. In Gooseberries and Currants, a little rapidly working artificial, say 5 to 7 cwt. of fish guano—care being taken to buy that of a good analysis—per acre, is a wonderful help in five or six weeks' time. With Apples and Plums a dressing of well-decayed farmyard manure on the surface is about the best way of assisting them through a heavy yield. The most advanced growers invariably assist their fruit trees through a crop in some such way.

A very few green Gooseberries were to be seen on Saturday. They sold extremely well, but they were dearer at Whitsuntide this year than they have been for ten or fifteen seasons. Some were sold at a fabulous price.—EXPERT, in "South-Eastern Gazette."

ROBERT FORTUNE, PLANT COLLECTOR.

(Concluded from page 412.)

IN 1848 Fortune was off again to China in the employ of the East India Company, for the purpose of introducing the Tea plant into India, which he so successfully did, as related in our "Port of London" papers. It was on this journey, described in his "Tea Districts of China and India," that he discovered and sent home that beautiful tree, the Weeping Cypress (*Cupressus funebris*), which he found growing in grounds of a country inn at Shang-i-yuen. In an old garden at Tung-che he found the charming *Berberis japonica*.

"Having taken a survey of the place," he says, "we were making our way out when an extraordinary plant, growing in a secluded part of the garden, met my eye. When I got near it I found that it was a very fine evergreen *Berberis*, belonging to the section of *Mahonias*, and having, of course, pinnated leaves. Each leaflet was as large as the leaf of an English Holly, spiny, and of a dark shining green colour. The shrub was about 8 feet high, much branched, and far surpassed in beauty all the other known species of *Mahonia*. It had but one fault, and that was that it was too large to move and bring away. I secured a leaf, however, and marked the spot where it grew, in order to secure some cuttings of it on my return from the interior."

In the Bohea ranges "a fine species of *Abelia* was met with on the Fokien side of the mountains, which will probably be a favourite in English gardens. Its flowers are as large as those of the *Weigela rosea*, of a blueish tinge, and bloom in great profusion for a long time. When I first saw the plant I took it to be the *Abelia chinensis* of Brown, but I observe that Dr. Lindley, to whom the plant was sent for examination, calls it *A. uniflora*. It is a curious circumstance that Dr. Abel, after whom the genus was named, discovered his plant on the same mountains, about a hundred miles to the north-west of the spot where the *Abelia uniflora* was found. He was then on his way with the embassy from Peking to Canton."

In a garden at Shanghai he had another find, which at first he mistook for a Holly. This was *Skimmia Fortunei*, producing a profusion of whitish flowers, deliciously scented, and afterwards becoming covered with bunches of red berries like our common Holly. "Its glossy evergreen leaves and neat habit add greatly to its beauty, and will make it a general favourite when it becomes better known"—which is exactly what happened, for it is one of the best town evergreens we have in our gardens. In another garden to the east of Shanghai he lighted upon the yellow *Camellia anemonæflora*.

In 1852 he was deputed a second time by the East India Company for the purpose of adding to the collections already formed, and particularly of procuring some first-rate black Tea makers for the experimental Tea farms in India. It was during his residence in China on this occasion that he discovered that handsome Conifer *Pseudolarix Kämpferi*, called by the Chinese the Golden Larch, probably from the rich yellow appearance which the ripened leaves and cones assume in the autumn. Another discovery worth noting was *Farfugium grande*, the beautiful herbaceous plant with variegated leaves, which he came across at Ningpo, as related in his "Residence Among the Chinese."

But perhaps his most gratifying journey was to Japan in 1860, which yielded new plants literally by the dozen. The glorious *Thujopsis dolabrata*, the male *Aucuba japonica*, the umbrella-like *Sciadopitys verticillata*, that handsome evergreen *Osmanthus aquifolius*, the queen of Primroses *Primula japonica*, the fine Oak *Quercus sinensis*, and above all the lovely *Lilium auratum*, gathered as it grew wild on the hillside, were among the many garden favourites discovered and sent home during this eventful expedition. Had this been Fortune's only journey, it would have been enough to immortalise him. In the course of it he took another trip to Shanghai. "The steamship 'England,'" he remarks in his "Yedo and Peking," "being about to return to Shanghai, I availed myself of the opportunity to go over to that port with my collections, in order to ship them for England, there being as yet no means of sending them direct from Japan. Mr. Veitch had also put his plants on board the same vessel, so that the whole of the poop was lined with glass cases crammed full of the natural productions of Japan. Never

before had such an interesting and valuable collection of plants occupied the deck of any vessel, and most devoutly did we hope that our beloved plants might be favoured with fair winds and smooth seas, and with as little salt water as possible—which fortunately they were.

Some of the things he met with in Japan were really wonderful. For instance, he saw a specimen of *Wistaria sinensis* which measured, at 3 feet from the ground, 7 feet in circumference, and covered a space of trelliswork 60 feet by 102 feet. One of the racemes of bloom he measured was 42 inches in length. The thousands of long, drooping, lilac racemes had a most extraordinary appearance. People came from far and near to see the tree during the time it remained in bloom; and, as it was in the garden of a public tea-house, it brought an extensive custom to the proprietor.

In his description of the Japanese flora he becomes enthusiastic.

"All countries," he says, "are beautiful in spring, but Japan is pre-eminently so. The trees were clothed with leaves of the freshest green, and many of the early flowering kinds were in full blossom. The



FIG. 96.—MR. ROBERT FORTUNE AT THE AGE OF 54.

double-blossomed Cherry trees and flowering Peaches were most beautiful objects, loaded as they now were with flowers as large as little Roses. Camellias, forming goodly sized trees, were common in the woods, and early Azaleas adorned the hillsides with flowers of many hues. Here the *Azalea obtusa*, with flowers of the most dazzling red, was peculiarly at home. *Cydonia japonica* (otherwise *Pyrus acanthus*) was seen in a wild state creeping amongst the grass, and covered with red blossoms; Violets, often scentless, covered every bank; and several varieties of Primrose were met with under trees in the shady woods."

A delightful task it must have been to wander amid such a wealth of loveliness, and pick and choose that which he thought would be appreciated at home; but it is difficult to give an idea of his work without becoming a mere cataloguer of systematic names. It is almost safe to say that there is not a cottage garden in England of any size which has not in it something which was introduced by him.

We have mentioned a few of his captures, and there were scores of others. The winter Jasmine (*Jasminum nudiflorum*), whose bright yellow blooms adorn its leafless stems in January, was his; so were the variegated Japanese Honeysuckle, the variegated Oleaster, and the variegated Kerria. To him we owe the Golden Bell (*Forsythia*), the Chusan or Pomponne Chrysanthemum, the double Bindweed (*Calystegia pubescens*), many now common species of *Pæony*, *Azalea*, *Berberis*, *Clematis*, *Euonymus*, and a hundred others. There is no man who left a broader mark on English gardening than Robert Fortune.

COTONEASTER HORIZONTALIS.—This is a very handsome plant for a wall or for a rocky bank; its fan-like spreading branches and glossy green foliage giving it a distinguished appearance in comparison with others of the family. Although it is not, I understand, a rare plant, it is one apparently not in common cultivation.—E.

TOMATO WINTER BEAUTY.

WITH all due respect to "A. D.," page 370, and without any wish to say anything to detract from the merits of the new Tomato so well grown and shown by Mr. Mortimer, I am of opinion that the Fruit Committee of the R.H.S. was not justified in departing from the rule that has been followed in so many other instances—viz., that of having promising Tomato novelties tried at Chiswick.

I thought the Committee a little too hasty when I read the report, and the illustration of the house of plants given on page 387 of the *Journal of Horticulture* confirms me in that view. Topping plants naturally favours the growth, and hastens maturity in the case of two or more clusters of fruit set on them, and has had much to do with the earliness of the fruit on Mr. Mortimer's plants. If these had been shown a fortnight or three weeks earlier I should have been better pleased. At the time the Committee held the meeting, we could have shown baskets of Early Ruby, equal apparently to Winter Beauty, and 50 lbs. of Cropper were sent that day to a commission salesman, all perfect in form and beautifully ripened. These were gathered from heavily cropped plants, not topped till the ridge of the house was reached. I much regret now not having had this house photographed, but justice could not have been done to the crop without sacrificing far more leaves than was desirable.

The fruits in the photograph more resemble Conqueror than Perfection in form. Big fruit may strike "A. D." as being desirable, and Londoners evidently are not very particular. But try the provinces.—MARKET GROWER.

[The fruits referred to were grown in the provinces, and their merits estimated by provincial judges.]

MANCHESTER WHITSUNTIDE SHOW.

THE gardens never looked better than in the early morning of last Friday, when the preparations for the great Whit-week show were in full progress. But later in the day the sky became overcast, and rain fell heavily. It is only at such times that the services of the grand exhibition house and the fine promenade can be fully appreciated, and here at all events something approaching a hall for horticulture can be found. In comparison with former shows the present one was not so large, and one missed such well known firms as Messrs. Sutton & Sons, B. S. Williams & Son, Sander & Co. of the trade, and Messrs. E. Ashworth, T. Statter, W. Thompson of Stone, F. Hardy, and others who are so intensely interested in everything connected with horticulture. Their absence is, we hope, only temporary, in fact in one or two cases we know that the peculiar spring had not developed the blooms as quickly as usual. Mr. Weathers, and Mr. Paul his assistant, had all in readiness for the judges, and what was missing in quantity was more than compensated for by the perfect quality of all concerned.

Mr. Cypher of Cheltenham was the chief exhibitor, arranging a most beautiful group. Mr. Robson of Bowdon, who was placed second, had some handsome types on evidence. Mr. Heath of Cheltenham was third. For the best collection of Cattleyas and *Lælias* Mr. Cypher won in a decisive manner, and also for ten specimens of Orchids in bloom; a grand *Cymbidium Dayanum* being noticeable. Mr. Heath was second. For ten stove or greenhouse plants Mr. Cypher was the only exhibitor.

In the amateurs' section for six plants, Mr. Wilkes, gardener to Miss Lord, Ashton-on-Mersey, was first, his *Ixoras* and *Clerodendrons*, although somewhat early in the season, were well bloomed. He also won with six and one fine foliage stove plant and flowering greenhouse plant, other single specimen classes being taken by Messrs. J. McIntyre of Darlington and H. Storey of Brooklands, the former securing the class for ten exotic Ferns with fair specimens, Messrs. W. & J. Birkenhead being second and first for ten hardy Ferns.

Gloxinias were in numbers and of good appearance, *Calceolarias* and *Cinerarias* small but fresh, *Begonias* very moderate, *Pansies* and *Violas* telling in colour. Herbaceous plants were admirably arranged. The winners were Messrs. Harker, R. A. Naylor, Thelwall; Mr. Morgan, gardener to Mrs. Fildes, Debroyd Castle, Todmorden; and Mr. E. Donner, Fallowfield. The well-known and highly respected Rose-grower, James Brown, Esq., Ashton-on-Mersey, won with some choice Roses arranged for effect. *Coleus* and *Caladiums* were capital, Mr. Baxter winning with six of each, Baron Knoop with *Adiantums*, and Mr. F. W. Travers with table plants.

Groups of 250 feet space for nurserymen were of excellent quality, the prize card giving the award to Mr. A. J. Bruce, Chorlton-cum-Hardy, who had interesting plants decidedly lacking in brightness. Messrs. R. P. Ker & Sons, Aigburth, were second. For 200 feet Mr. J. McIntyre, jun., seemed to have the gift so well used by his father on previous occasions. It was a study of the highest importance. Mr. Wilkes went in for scarlet and white with much effect, but the background was too symmetrical. Mr. Morgan also displayed more than ordinary talent in the first prize group of 100 feet, and he was closely followed by Mr. Baxter.

The trade exhibits were of the highest excellence. L'Horticole Coloniale, Ltd., excelled all previous efforts with *Odontoglossum crispum* Countess of Derby, rose with crimson blotches; *O. vexillarium vittatum* (fine); *O. vexillarium candidum*, splendid light type; *O. Adrianæ tigrinum* (extra); and *O. Ruckeri* Queen Victoria, very handsome, all gaining certificates. A gold medal was also awarded. A similar compliment was paid to Messrs. Charlesworth & Co., Bradford, for a splendid strain of *Odontoglossum crispum*, one amongst many being labelled

"Georgina," very large white flower with brown spots, F.C.C. *Odontoglossum harvingtense*, a natural hybrid between *crispum* and *triumphans*, the latter preponderating, was especially interesting in every way, F.C.C. Mr. John Cowan, of Gateacre, Liverpool, had a choice and varied bank, the varieties being of the usual type for which the firm has become so noted. The gold medal was richly deserved. Messrs. H. Low & Co. had distinct quality to recommend them, *Odontoglossum Andersonianum giganteum*, some 5 inches in length; also *Cattleya intermedia alba*, being singled out of many good things for F.C.C. Silver medal. A silver medal was also granted to Messrs. J. Veitch & Sons, Chelsea, for a stand that fully maintained the reputation of the firm.

Mr. Jno. Waterer, Bagshot, had the finest exhibit of *Rhododendrons* ever seen at Manchester, the award to the handsome "Pink Pearl" being fully justified. Mr. Cypher gained a F.C.C. for *Cattleya Mendeli Princess*, a great beauty. Mr. Duncan Gilmour, Sheffield, helped materially to swell up the exhibition, the *Cattleyas* being very fine. An A.M. was given to *Cattleya Mendeli Ajax* (silver medal). Messrs. Clibran & Sons of Altrincham had a select bank of handsome flowering and foliage plants, a new *Pelargonium Oldfield Defiance*, of almost a blue shade, and their dwarf strain of *Salvia splendens*, looking excellent. Messrs. Dicksons, Ltd., showed their yellow Tree Carnation *Duchess Consuelo*. It is a true yellow self, and very free. *Auriculas* and *Polyanthus*, loved by all Manchester workmen, were also to be seen. Messrs. Webb & Sons of Stourbridge had a choice strain of *Calceolarias*, and the Misses Hopkins of Knutsford catered for lovers of herbaceous plants.

THE YOUNG GARDENERS' DOMAIN.

CARROTS.

CARROTS form one of the most important root crops. They do not require a soil that is specially manured for them, but one that has been thoroughly prepared mechanically, and of course which contains ample nourishment. In order to maintain a supply of young tender roots it is necessary to sow frequently. We commence with the first sowings on hotbeds during January or February. This crop is subject to depredations from mice and slugs, and proper precautions must be taken. As soon as the plants are large enough to handle with safety they must be thinned to 2 or 3 inches each way, reducing in number a few weeks later. Early French Horn and Early Nantes are suitable for frame culture, they also are of excellent quality. Sowings of these two varieties can be made on a south border in February, and where the soil is light and warm serviceable roots can be obtained early in May.

Main crop sowing commences in the open quarter in March, and frequent successions of the short or stump-rooted varieties are made. These I think are the best, as they give a quicker return than the intermediate and longer sorts. No more seed should be sown than will give a supply for from three to five weeks, as the roots are liable to become coarse if overgrown. Carrots grown in this way do not require much space; 5 to 6 inches between each row is ample, and one operation of thinning is sufficient until they attain a size fit for table. A few of the best varieties for sowing in the open ground are Champion Horn, Model, and Searlet Horn.

Although Carrots are preferred drawn from the open ground, it would be a mistake if a reserve were not stored for winter use. This necessitates a main crop of the intermediate type. The seeds should be sown in drills 12 inches apart, the time depending largely on the locality and the soil. I have seen first-rate Carrots obtained from seed sown in May, but soils differ so much that each cultivator must use his own discretion as to the time of sowing.

A valuable crop I consider is that which is from seeds sown at the latter end of July, as if protected during severe weather with thatched hurdles or straw litter it affords a supply of young crisp roots for winter use. The varieties mentioned for early work are well adapted for late use.—E. W. G.

CELERY.

AMONGST the many comestibles at present grown, Celery holds a very prominent place, it being one of the most valuable that the vegetable garden lays claim to. It is ever in request, both early and late, and the demand for it is increased by the variety of ways in which it can be used; and it is the object of every gardener to supply the requirement over as long a period of time as possible.

To have it ready in August or September the seed should be sown early in February, and in March and April for succession. Sow in pans of light soil, and place them in a temperature of 70°, keeping the surface moist until the young plants appear. When large enough to handle transplant them 2 or 3 inches apart in boxes filled with a rich compost, having first placed a layer of well-decayed manure in the bottom of the box. Put in moist gentle heat until the plants become established, when they may be gradually hardened, but care should be taken not to give them any severe check, or failure may be the result by the plants starting prematurely to seed. Plants from later sowing may be transplanted into frames, or on warm sheltered borders.

Soil that is naturally moist and inclined to be heavy is best suited for the cultivation of Celery, and a piece of ground answering to that description should be chosen if possible. If it is clear of other crops it will be benefited by being roughly dug over during winter. About the first week in May the trenches may be prepared, allowing a space of 6 feet from centre to centre, making them 18 inches wide and 9 inches deep. Break up the bottom with a fork, put in a layer of 6 or 8 inches of well decayed manure, dig it over again to mix it with the soil under-

neath, thus providing a deep, rich, rooting medium in which the plants will grow and withstand drought better than would be the case with shallow trenches. Make the surface even, and put back a little of the soil that was taken out, and the trench will then be ready for the young stock, which may be planted when ready or as soon as the weather permits, choosing, if possible, dull damp weather for the operation.

Subsequent treatment will consist in removing weeds, and keeping the plants free from suckers, and in watering, tying, and earthing. On light soils more water will be required than on soils of a heavier nature; but one learns from experience that much more water is often recommended and given that is necessary, with the result that the tissue is soft, and the stalks hollow, while it does not withstand the effects of winter so well as when it is in that firm and crisp condition which is so essential to good, well grown produce. When the trenches are well manured, there is always a steady and continued supply of moisture, and this, on some soils, and in ordinary seasons, will be almost sufficient.

The summer of 1898 was exceptionally dry, and our Celery got very little water, for the simple reason that it was very scarce; yet it grew well, was crisp and tender, and is still being sent in for use (May 13th), having passed the winter with only a small percentage of decayed heads. The soil is of a heavy nature resting on a blue clay. The earthing should commence early for the early crops, and proceed by degrees, or if it is required for exhibition it may be wrapped round with stout paper so as to exclude the light, and in about six weeks after the final wrapping or earthing it will be ready for use.—S. P.



HARDY FRUIT GARDEN.

Strawberries.—A liberal mulching of fresh manure, or half short and half long material, must be applied to Strawberry quarters where the plants are promising well for producing a crop of fruit. Feeding the plants may with great advantage be practised now. Soot is a good stimulant, and may be dusted freely round the crowns and watered in. Its presence will not only be beneficial to the plants, but inimical to slugs, which may be troublesome when the fruit begins to ripen and in damp weather. One ounce to the square yard of nitrate of soda assists heavy crops to swell off satisfactorily. Liquid manure may be utilised if available for all Strawberry plants except the youngest and most vigorous. To obtain fruit of large size and good quality the trusses of flowers should be thinned, and the small and deformed fruits cut out.

Planting Out Forced Strawberries.—These when worth retaining ought to be now planted out. The soil and roots must be thoroughly moist before planting them out in rich firm soil. Mulch well with short manure, and water freely until established. These plants throw out good runners, which are useful for early propagation.

Young Plants.—If the plants placed out early last season have done well excellent crops ought now to be promising. Later planted beds may bear, but not so heavily, while those planted out later still, and during the spring, though showing a tendency to bear by the production of flowers, ought not to be allowed to do so, as the perfecting of a crop of fruit will hinder the vigorous growth of the plants, therefore nip out the flower trusses this season, and the benefits will be derived next season.

Outdoor Vines.—Where the growths from the spurs are too numerous disbud or cut out the least necessary and unsuitable. The shoots retained must be fruitful or well placed as successional growths. Stop the fruitless shoots at the sixth or eighth leaf, and the others one or two joints beyond the bunch. Tie out the shoots in a regular manner without any crowding. Well situated growths may be trained-in to occupy vacancies, or to eventually take the place of worn out spurs or rods. The growths selected for this purpose ought to be vigorous. Let them originate as near the base as possible. When they have extended to a length of 4 feet stop them at a joint near that point. This will plump up the buds by concentrating the sap for a time, the surplus eventually finding an outlet in extending a fresh leader, which may be allowed to encourage growth. One effect of the stopping is to enlarge the principal leaves, which if receiving plenty of light perform more and better work. Laterals may start from the axils, but these can be stopped at the first leaf. No more shoots should be laid in than room can be found for. Growth is now rapid, and overcrowding quickly becomes evident, necessitating the removal of shoots more severely than desirable, which gives a check.

Peaches and Nectarines.—Disbudding or rubbing off shoots must now be discontinued, as the growths are becoming too long and woody to be easily rubbed off. The new growths retained should be fastened in or temporarily laid in in the direction intended for them to grow. They are pliable and readily disposed in a right direction, but later, when they are stiffened, they will not bend. Do not tie or nail in tightly, as room must be left for the shoots to swell. Keep nails away from fruit swelling, whether the iron is old or new.

Every endeavour must be made to maintain the trees in a healthy condition. In order to do this the foliage must be frequently syringed

towards the evenings of hot days, and if red spider should have obtained a foothold, an insecticide will be necessary. Much, however, may be done to prevent attacks of this pest if the soil about the roots is kept moist by copious waterings, and laying on a mulch of half-decayed manure. Healthy trees bearing good crops will need water weekly, and as the fruit swells sewage water may be applied. This assists the crop greatly and prevents its drawing too much upon the tree's resources. Red spider and other insect pests are less troublesome when adequate moisture and food are available for the roots. The fruit should be thinned to the required number by degrees, commencing when they have attained to the size of small nuts. Many of the small and ill-placed can be removed sooner.

Pears and Plums.—Lateral growths which require removal are now beyond the stage when they can be rubbed out, hence where thickly placed they must be cut out entirely. Room is thus afforded for the remaining growths to extend and produce good lower leaves, which will feed the buds at their base. Summer pruning can then be carried out as soon as the lower leaves have attained full size. Pinching the growths when young and soft invariably results in a thicket of growths which ruin one another, as time is seldom available for this form of management. It therefore should not be adopted unless subsequent growths can also be pinched as well as crowded growths boldly thinned out.

Red and White Currants—Sucker growths at the base of bushes must be cleared out, as if allowed they crowd the bushes. A commencement may be made in nipping back the young growths to three pairs of leaves. This will let light and air to the fruit.

FRUIT FORCING.

Cucumbers—Plants that have been in bearing since the beginning of the year in a house may be removed, and the house being cleansed, it can be utilised for a late crop of Melons, or another crop of Cucumbers. Where, however, the Cucumber plants are fairly healthy, and the supply of fruit insufficient from pits and frames, they may be kept fruiting some time longer by removing the surface soil and replacing with some lumpy loam, afterwards surfacing with sweetened manure, giving a good soaking of water or liquid manure. Thin out the old growths and encourage young in the place. Shade from powerful sun, syringe the plants in the morning and afternoon, and damp well before nightfall. Fire heat need only be employed to maintain a temperature of 60° to 65° at night, and 70° to 75° in the daytime. Admit a little air at 75°, increase it with the advancing sun heat, keeping through the day at 80° to 85° or 90°, and close early in the afternoon so as to run up to 90° to 100°.

Plants in pits and frames should be ventilated from 7.30 to 8 A.M., and in the hottest part of the day a slight shade from fierce sun will be beneficial; keep through the day at 85° to 90°, close at 85°, and so early as to raise the temperature 5° to 10° or more from sun heat. Keep the plants watered as required, never allowing them to lack a supply without meeting it promptly and before they are distressed, and not giving needless supplies so as to make the soil sodden. Avoid crowding the foliage, thinning well, maintaining a succession of young bearing wood, removing bad leaves, and stopping the shoots one or two joints beyond the show for fruit. Over-cropping and allowing the fruit to remain on the plants after they become fit to cut greatly weakens them, and must be guarded against by timely thinning and cutting the fruit, which keep some time in a cool place, with the neck end inserted in a saucer of water. Straight fruits are not only handsomer and more easily packed than the crooked, but they possess greater value, therefore place the young fruits in glass tubes, or pieces of deal nailed together so as to form open ended troughs about 3 inches wide.

Peaches and Nectarines.—*Early Houses.*—When trees of Alexander, Waterloo, and Early Louise Peaches, with Cardinal and Advance Nectarines, are cleared of their fruit, the wood that has borne it should be cut to the successional growths from their base for next year's fruiting, except those needed for extension. If the trees are too full of wood thin well, so as to admit light and air to the shoots, and thereby insure their thorough ripening. Early forced trees are liable to have the buds over-developed, and to east them, therefore some growers leave the old wood until a later period to retard the buds, while others shade the house from bright sun with a similar object. Covering the roof-lights with a thin wash of whiting and skim milk answers perfectly, using it as soon as the blossom buds are commencing to form, or from the fruit being gathered until the latter part of August. This is a good plan where trees suffer from over-maturity of the buds, and, with proper regard to watering and keeping the foliage clean, is effectual. Syringing should be practised in the morning and evening to free and keep the trees clear from red spider. The borders must be kept in a thoroughly moist condition, as it is important that the foliage be healthy as long as possible. Admit abundance of air in the daytime when the fruit is ripening, and a little at night to prevent the deposition of moisture on the fruits, which is likely to induce decay at the apex, if not encourage the attack of "spot," which is rather prevalent this year on Figs and Grapes, and in less degree on Peaches and Nectarines.

Succession Houses.—Only moderate artificial heat will now be necessary in order to admit a free circulation of air. Remove any leaves that shade the fruit too much, raising them on laths placed across the trellis, so as to bring them with their apexes to the light. Attend regularly to tying-in the shoots, stopping the laterals at the first joint as soon as made. Any growths that cannot be allowed to extend without crowding or encroaching on others stop at about 14 inches, exception being made of extensions. Shoots retained level with or past the fruit to attract the sap to it should be stopped to one or two joints at each break. Syringing must be practised morning and afternoon to keep red spider under, and the inside

border attended to regularly with water. Admit air early in the day, and in the case of houses glazed with the best quality glass in large panes a double thickness of herring or single pilehard netting drawn over the roof-lights is beneficial in very bright and hot periods, preventing the leaves browning. A little whitewash from a fine rose syringe on the glass also diffuses the light, and acts favourably, and has the advantage that the first rain washes it off, and gives the much-needed light in dull periods.

Late Houses.—Let there be no delay in thinning the fruit, leaving very few more after the fruits attain the size of Walnuts than will be required for the crop, up to which stage the thinning should be gradual, and avoid overburdening the trees. It is better to retain too few rather than too many fruits, fine examples being always appreciated, while the indifferently swelled and quality-lacking are a source of complaint. There is no greater mistake than retaining more shoots than there is room for. If the wood is not properly formed, and is not solidified as made, imperfect buds result. If aphides appear fumigate on two or three consecutive evenings, having the foliage dry, and being careful not to give an overdose; or apply one of the advertised insecticides, carefully following the instructions. Should mildew attack the fruit or foliage dust with flowers of sulphur, taking care to reach every part.

Pines.—*Providing for a Successional Supply of Fruit.*—Pine plants yield, as a rule, the finest fruits when they show these ten to twelve months from the time the suckers are potted, but some allowance must be made for the size of them when started, also for autumn potted suckers, which have to make a part of their growth under adverse influences. Plants that were potted last September will now be showing fruit; if not, means should be adopted to effect it. This can be done by subjecting those of that age not now showing signs of fruiting—a thick sturdy base, and the leaves commencing to open in the centre of the plant—to comparative rest for a period of four to six weeks, lowering the heat at the roots to 75°, admitting air fully at 75° to 80°, and letting the temperature fall to 75° before closing the house for the day. The plants must not be allowed to become excessively dry at the roots, but when a supply is needed, and only then, afford it liberally. The smaller suckers of the plants, placed this spring in the fruiting pots, should be kept growing until they have filled their pots with roots, when, if it be necessary, the plants can be subjected to the same course of treatment as advised for the larger plants, and these will afford a successional supply of fruit.

Potting Successional Pines.—When the strongest suckers potted last March filled the pots with roots, they would be transferred to their largest pots. If they are not yet potted no further delay should be tolerated, as to retain them longer in small pots is detrimental to their after growth. Recently potted plants should have a regular bottom heat of 85° to 90°, and be thoroughly watered after potting if the soil be dry, and no more should be given until the soil becomes again in that condition, as it is necessary to exercise more care than usual at this stage, the state of the individual plants being ascertained before its application.

Young Pines.—Growing stock will be making rapid progress, and should be regularly attended to in every particular. Ventilate early in the day at 75° to 80°, to render the foliage dry before it is acted powerfully upon by the sun. Discontinue shading successional plants, but if very near the glass and the panes large a slight shade will be advisable in the hottest part of the day; also for fruiting plants with the crowns in close proximity to the roof.

THE BEE-KEEPER.

COMMENCING BEE-KEEPING

It makes little difference at what season bees are obtained if the bee-keeper understands their management. We have sent bees long distances at midwinter, and also in the height of summer, without any difficulty. It is, however, important that beginners who purpose making a start at bee-keeping should commence at the most favourable season, and for various reasons we recommend spring in preference to autumn.

If bees are obtained in the autumn there is always the risk of losing them during the winter, either from insufficient food, cold, or dampness in the hives, or queenlessness. There is one advantage in procuring a strong stock of bees in the autumn. If they winter well, and increase is preferred the first year to a surplus of honey, they may be readily increased to half a dozen strong colonies by the following autumn if the original stock is allowed to swarm and the stock and swarm are afterwards divided so as to obtain the requisite number of colonies.

The plan we adopted when an increase of stocks was of more importance than a large surplus of honey, was to encourage the queen to commence laying as soon as the weather was favourable in the spring. This was done on the lines advocated in previous notes—namely, feeding those that were short of stores with warm syrup and uncapping the cells of the others. The brood chamber was also enlarged, in one instance to twenty frames. This hive, we may say, was crowded with bees and the whole of the frames filled with brood by the last week in May.

If an ordinary hive is used we recommend a beginner to allow the bees to swarm naturally, and if a small surplus is desired place them on not more than six frames, which may be filled with comb foundation. If the weather is favourable and honey is coming in freely a crate of sections or shallow frames may be placed on them, and the bees will at once carry the honey up into the super. There will be thus a surplus stored, and a strong colony of bees for wintering.

AFTER MANAGEMENT.

The original stock from which the swarm came may afterwards be divided into as many nuclei as required, care being taken to rear at least one extra queen to replace the old one, which came off with the swarm. It will be better to defer introducing her until the supers are removed, as at least four extra frames will be required to give the bees sufficient space in which to store their winter supplies. If the young queens have been properly attended to, and they became fertilised without any delay, a sufficient number of frames filled with brood may be obtained from the nucleus in which the young queen was raised. The bees may be distributed between the other hives, which will strengthen them, as there will be a strong colony of bees in the hive that was supered, which will increase in strength as the brood hatch out from the combs that were introduced.

Owing to the large amount of honeydew stored by the bees last year they were not robbed of their natural stores as much as they would have been had the honey been of good quality. Bees, therefore, have wintered well, and are plentiful and reasonable in price. There should be no difficulty in obtaining strong swarms of bees by the end of this month should the weather become more settled. We prefer spring, if that pest of bee-keepers, foul brood, is known to exist in the district, as a strong swarm would not be likely to come off from a diseased stock. If there is any doubt in the matter a guarantee should be obtained with the bees. As soon as the swarm is obtained they should be placed on as many frames of comb foundation as they can well cover, drawing up the division board close up to the outside comb, and if the weather is bright it will be an advantage to shade them for a few days, giving more frames as often as necessary.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Physalis Franchetti (S.).—The plant thrives in ordinary garden soil, planted in a bed, and produces abundance of fruits, which are very ornamental when ripe on account of the large, highly coloured, inflated calyxes. It grows taller and more robust than the Winter Cherry, *P. Alkekengi*, hence requires more room.

White Scented Greenhouse Rhododendron not Flowering (Idem).—The plant is probably *Rhododendron jasminiflorum*, and should be kept under glass constantly, not placed out of doors in the summer months. Give it a light and airy, but not draughty, position in the greenhouse, keeping moist, but not over-watering. It does well in a rather small pot—indeed, overpotting is a mistake, as the soil becomes sodden and sour.

Manuring Ground for a Second Crop (O. F.).—It is an excellent and often necessary practice to manure the ground after removing the spring crop, such as Peas, before planting young Cabbages. Rather more than half-decayed stable manure is the best to use. In our experience we have had excellent results in manuring for every crop, applying $2\frac{1}{2}$ cwt. per rod = 20 tons per acre on the double crop in a season system, and up to 40 tons per acre, 5 cwt. per rod, on the one-crop and autumn application plan. In certain cases it is not advisable to use heavy dressings of stable manure, such as for Broccoli, which may be grown too succulent, hence liable to injury from frost in severe weather.

Strawberry Jam (C. C.).—The following is an excellent receipt:—To each pound of Strawberries allow half a pound of sugar. Procure firm scarlet Strawberries (ours are Vicomtesse Hericart de Thury), strip off the stalks and put the fruit in a preserving pan over a moderate fire: boil for twenty minutes, stirring constantly. Remove from the fire and add the sugar, granulated being the best; place over the fire, and boil quickly for another twenty minutes. Put into pots, and tie down while hot, upon which point largely depend the keeping properties of the preserve. We have never been troubled with the mould of which you speak. Most of the fruits have retained their natural shape, while the flavour is all that can be desired.

Datura (Brugmansia) sanguinea (J. C. S.).—This plant is a native of Peru, and requires to be kept under glass until a flowering habit is induced. The point is to secure thoroughly ripened wood, keeping dry and cool during the winter months. Pruning should be done in the autumn. The plant must not be placed outdoors in summer, but given plenty of light in a greenhouse or conservatory. *Datura sanguinea* enjoys a moderate amount of warmth—as that of a vinery when in full growth—and requires to be kept dry and quite cool in winter. During the flowering period liquid manure is most useful in increasing the vigour of the plant and the number and size of the flowers. Old plants flower far more freely than young ones.

Fungus on Mushroom Bed (Condy).—The fungus is known as *Clavaria formosa*. It grows on the ground in woods or wooded pastures, and often forms large tufts 3 to 4 inches in height, sometimes crowded and extending for several feet. We are not aware that it has any injurious properties, and certainly no economic value. It has probably been introduced to the Mushroom bed in the droppings, or with the soil, and has become singularly fine under the favouring conditions. Its mycelium will have impoverished the Mushroom bed and interfered with the development of the Mushroom spawn. We can only suggest removing the fungus growths as they appear, and using a little salt—about an ounce to three gallons of water—for watering the bed, keeping the solution from the Mushrooms showing on the surface.

Diseased Chrysanthemum Leaves (W. H. P.).—The leaves are affected by eelworm, *Tylenchus devastatrix*, and also by a fungus, *Septoria chrysanthemi*, which usually attacks cuttings or young plants. The clammy substance on the leaves is due to eelworm, for which remove the worst infested leaves and burn them. Spraying with methylated spirits, using an atomiser or pneumatic sprayer, so as to coat the leaves with the finest possible film, quickly disposes of the eelworms in the diseased parts, but these will not recover, as their tissues have been destroyed. The eelworms also attack the stems, the plants sometimes dying off at the collar. Dust the plants with tobacco powder, watering the roots with lime water made in the usual way, alternating with kainit 1 oz. to a gallon of water, and following with nitrate of soda, $\frac{1}{2}$ oz. to a gallon of water. For the fungus see reply to "J. F. S." on page 439.

Spots on Forced Strawberry Leaves (D. W.).—Yes, there are some red spider, but not enough to account for the fruit not swelling. The spots on the leaves are caused by the Strawberry leaf-blight, *Sphaerella fragariae*, which appears much on the increase. There is no cure, for the fungus is wholly endophytic, though, of course, the "fruits" discharge the spores externally, hence spraying with Bordeaux mixture, or dusting with a fungicide in powder, prevents the spread if done in time. The mixture, or even powder, containing sulphate of copper, should not be used on the fruit, hence the treatment is wholly preventive, and this is the proper course to pursue with all endophytic parasites. Young, non-bearing plantations, which applies to those in pots, should be sprayed two or three times during the summer. The spraying acts well against mildew, and also against Strawberry mould, always keeping clear of the old foliage as soon as it can be spared—this is, after the crop has been gathered, burning the rubbish, or at least fermenting in a heap and turning over. The heat kills the spores in the perithecia and also the sclerotia.

Erythrina crista-galli not Flowering (J. C.).—This plant is a native of Brazil, yet in the southern counties almost hardy. To flower well it must have a strong loamy soil, abundance of water given when not at rest, and full exposure to bright sunshine. Keep it growing all summer in a warm house, and treat liberally, so as to induce vigorous growth. In September, water should be gradually withheld, so that the wood may ripen, the leaves fall, and the plant go to rest for the winter. Early in spring it must be repotted, placed in a hot moist atmosphere, and supplied with plenty of water at the roots. This treatment should induce the plant to produce large racemes of flowers. In most cases it is advisable to start the plant in heat, as this is conducive to the free production of shoots. As these increase in strength, a lower temperature will be sufficient, till, finally, the plants may be placed outdoors for the summer. After flowering, the shoots die down, when the plants can be placed in a cool frost-proof house, kept dry and at rest until the following spring. Of course, the old stems require to be cut away to the basal or rootstock buds. The plant can hardly be expected to flower in a 5-inch pot.

Dictamnus albus not Flowering (J. S.).—This plant is a native of Eastern Europe, and of Asia. It is of easy culture in ordinary garden soil, preferring, however, a rather dry position. We presume the situation is too moist and cold, hence can only advise a warmer and drier position in the full sun for the plant.

Insecticide for Orchard Trees (Jardinère).—As a general wash for destroying caterpillars, green fly, and red spider—indeed, all orchard pests, good service has been done with arsenite of soda $\frac{1}{2}$ lb., acetate of lead $1\frac{1}{2}$ lb., petroleum emulsion 16 lbs., water 100 gallons. For making, add the materials in the order named, and mix thoroughly. The earlier it is applied the better, or as soon as the fruit is set, but preferably before the trees come into blossom, repeating as soon as the fruit is set, by means of a spraying apparatus for the sake of economy.

Victoria Plum Leaves Glaucous (Loughgall).—The leaves are affected by what is known as "silver leaf," which is probably caused by a fungus, but no satisfactory reason has yet been given for the affection. The twigs are overgrown with moss, and altogether in a bad state of health. The fungus sometimes affects the fruits, giving rise to what are known as "bladder Plums," but it also attacks the Sloe and Bird Cherry. It would be advisable to spray the trees with Bordeaux mixture at half strength, and afford a top-dressing of some approved fertiliser, so as to promote better health in the trees, applying it from the stem outwards to a foot beyond the spread of the branches.

Chemical Composition of Kainit (H. J. E.).—The following is a good average analysis:—

Moisture	...	...	...	...	...	12.70
*Sulphate of potash	...	...	...	...	...	23.60
Sulphate of magnesia	...	...	...	...	...	14.50
Chloride of magnesium	...	...	...	...	...	12.40
Chloride of sodium	...	...	...	...	...	34.60
Sulphate of lime	...	...	...	...	...	1.70
Insoluble matter	...	...	...	...	...	0.50

100.00

*Equal to pure potash ... 12.80

The article was first used in Germany, but we do not know at exactly what time.

Vine Unsatisfactory (Prior).—We can only suggest selecting the best of the three growths now starting, and removing the others. The Vine will probably make a good cane this summer, but a pailful of blood applied raw to the soil was not good practice. It ought to have been mixed with soil and the powdered mortar before applying, allowing to lie for at least three or four months, and then be placed on the surface of the border, and lightly pointed in without disturbing the roots of the Vine. The other substances would not do any harm, but good, though we consider you are overfeeding. If the Vine has not been overdone in that respect, and other conditions are favourable, we do not see why there should not be a good growth this summer. Better leave it alone as regards manure for a considerable time, for what you are doing or have done is anything but favourable.

Fungus on Chrysanthemum Leaves (J. F. S.).—No, there is no "rust," but a fungus which causes the yellowness and afterwards browning of the leaves, which wither and die. The parasite is called *Septoria chrysanthemi*, which chiefly attacks young plants and the cuttings, and is frequently accompanied by eelworm, but we did not find any in your case. The fungus is wholly internal, therefore not readily reached by an external application, but the disease has been prevented spreading by spraying with diluted Bordeaux mixture, and dusting with the advertised preparations of sulphate of copper, such as anti-blight and fostite. The precaution should be taken to select cuttings from perfectly healthy plants, not to keep them too close, and avoid very rich soil. The procedure you have followed—namely, "picked off all leaves which are as bad as the loose ones" sent us, "and dipped the plants in Kilmright, 2 ozs. to 1 gallon of water," is the correct one. Give the plants all the light and air possible, then they will, with the treatment, grow out of the disease.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. A. T.).—*Crataegus mollis*. (Condy).—1, *Akebia quinata*; 2, *Holboellia* (*Stauntonia*) *latifolia*. (H. J. J.).—1, *Centranthus macrosiphon*; 2, *Cheiranthus alpinus*. (E. B.).—*Saxifraga granulata*. (R. G.).—*Hamamelis japonica*, the Japanese Witch Hazel.

TOMATO WINTER BEAUTY.—We are informed that the entire stock of Mr. Mortimer's new Tomato, Winter Beauty, which was exhibited at the R.H.S. meetings at the Drill Hall, on April 18th and May 2nd, and received the Society's award of merit on the former date, has passed into the hands of Messrs. Sutton & Sons, of Reading, who will distribute it next season. This variety was figured on page 387 of our issue of May 11th.

TRADE CATALOGUES RECEIVED.

Christmas & Co., Worplesdon.—*Home Made Wines*.
Merryweather & Sons, Ltd., Greenwich Road.—*Spraying Machines*.
T. S. Ware, Ltd., Tottenham.—*Herbaceous Plants*.
E. A. White, Ltd., Paddock Wood, Kent.—*Abol Insecticide*.

COVENT GARDEN MARKET.—MAY 24TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	...	1 3 to 3 6	Lemons, case	...	30 0 to 60 0
Grapes, lb.	...	1 6 2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	...	0 0 to 0 0	Mustard and Cress, punnet	0 2 to 0 4	
Beans, $\frac{1}{2}$ sieve	...	0 0 0 0	Onions, bushel	...	3 6 4 0
Beet, Red, doz.	...	1 0 0 0	Parsley, doz. bnchs.	...	2 0 3 0
Carrots, bunch	...	0 3 0 4	Parsnips, doz.	...	1 0 0 0
Cauliflowers, doz.	...	2 0 3 0	Potatoes, cwt.	...	2 0 4 0
Celery, bundle	...	1 0 0 0	Salsafy, bundle	...	1 0 0 0
Coleworts, doz. bnchs.	...	2 0 4 0	Scorzonera, bundle	...	1 6 0 0
Cucumbers	...	0 4 0 8	Seakale, basket	...	1 6 1 0
Endive, doz.	...	1 3 1 6	Shallots, lb.	...	0 3 0 0
Herbs, bunch	...	0 3 0 0	Spinach, pad	...	0 0 0 0
Leeks, bunch	...	0 2 0 0	Sprouts, $\frac{1}{2}$ sieve	...	1 6 1 9
Lettuce, doz.	...	1 3 0 0	Tomatoes, lb.	...	0 4 0 9
Mushrooms, lb.	...	0 6 0 8	Turnips, bunch	...	0 3 0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arums	...	2 0 to 3 0	Lily of the Valley, 12 sprays	0 4 to 0 10	
Asparagus, Fern, bunch	...	2 0 2 6	Marguerites, doz. bnchs.	4 0 5 0	
Azalea, white, doz. bnchs.	...	3 0 4 0	Maidenhair Fern, doz.	...	6 0 8 0
Camellias, per doz.	...	1 0 2 0	bnchs.	...	6 0 8 0
Carnations, 12 blooms	...	1 6 3 0	Narcissus, doz. bnchs.	...	1 0 2 0
Daffodils, single yellow,	Orchids, var., doz. blooms	...	1 6 9 0
bel. 12 blooms	...	0 6 0 8	Pelargoniums, doz. bnchs.	...	4 0 6 0
Daffodils, double, bunches	...	0 4 0 6	Roses (indoor), doz.	...	2 0 3 0
Eucharis, doz.	...	2 0 3 0	Red, doz.	...	2 0 4 0
Freesia, doz. bnchs.	...	2 0 3 0	Tea, white, doz.	...	2 0 3 0
Gardenias, doz.	...	1 0 2 0	Yellow, doz. (Perles)	...	2 0 3 0
Geranium, scarlet, doz.	Safrano, doz.	...	2 0 2 6
bnchs.	...	4 0 6 0	Smilax, bunch	...	2 0 3 0
Hyacinths, Roman, bunch	...	0 4 0 6	Tulips, bunch	...	0 4 0 6
Lilium Harrisii, 12 blooms	...	3 0 4 0	Viola's doz. bunches	...	0 6 1 6
longiflorum, 12 blooms	...	4 0 6 0	Parme, bunch	...	2 6 3 0
Lilac, bunch	...	3 0 4 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz.	...	6 0 to 36 0	Ficus elastica, each	...	1 0 to 7 0
Aspidistra, doz.	...	18 0 36 0	Foliage plants, var., each	...	1 0 5 0
Aspidistra, specimen	...	5 0 10 6	Lilium Harrisii, doz.	...	24 0 36 0
Crotons, doz.	...	18 0 24 0	Lycopodiums, doz.	...	3 0 4 0
Dracæna, var., doz.	...	12 0 30 0	Marguerite Daisy, doz.	...	6 0 8 0
Dracæna viridis, doz.	...	9 0 18 0	Myrtles, doz.	...	6 0 9 0
Erica various, doz.	...	9 0 24 0	Palms, in var., each	...	1 0 15 0
Euonymus, var., doz.	...	6 0 18 0	specimens	...	21 0 63 0
Evergreens, var., doz.	...	4 0 18 0	Pelargoniums, scarlet, doz.	...	8 0 12 0
Ferns, var., doz.	...	4 0 18 0	Solanums, doz.	...	6 0 12 0
small, 100	...	4 0 8 0			

Bedding out plants in variety from 3s. doz.



STUD BABIES.

Poor little things! what an anxiety they are—not to their parents, for their father they never know, and their mothers have no idea of their monetary value, and less idea of the risks they run. Only one foal in a twelvemonth, and the breeding days of a mare are not for ever.

Living as we do next door to a rather important Shire horse stud, and holding the owner in great esteem, we have seen much of the pleasures and anxieties that beset the springtime of the year. Two or three mares are expected to foal. There is a certain air of excitement about the stables, and more than an air of excitement in the head man's manner. Poor fellow! his responsibilities are weighty; practically he is in sole charge of most valuable property; a few minutes' neglect, a little impromptitude in action, and a valuable life is sacrificed, or the long-expected foal comes to an untimely end.

In our country neighbourhood, as in many more, it is a matter of six or seven miles before a decent veterinary surgeon can be reached, and then the chances are he is not at home. Privately we have more faith in the prompt attention of a man who has been brought up in the stables to the more skilled, but often delayed, services of the "vet." One would suppose a carthorse foal was of so stalwart a nature that little would affect it, but somehow or other, if we have a particularly well-bred foal, it seems surrounded by pitfalls from its birth to the time when it is fairly yoked, and takes its place and does its share of farm work.

That many of the risks are preventible we feel sure; perhaps we are ourselves to blame in a measure for the delicacy of our young stock by our persistent high breeding and our system of forcing for early maturity. Competition is so strong, we have "assisted" Nature too much, so she takes her revenge.

We can hardly imagine our skin-clad, woad-painted ancestors as liable to nervous disorders—indigestion, gout, and stomachic troubles—they are the outcome of ultra-civilisation, and the same applies to our stock. We may have symmetry of shape and form, but we have to pay for it sooner or later.

Let us imagine the longed for foal safely arrives. There must not be long delay ere a meal is served, and that meal its mother's milk. There are cases, indeed, when the poor foal is an orphan, and no foster-mother at hand. Then it becomes necessary to make a "bottle baby," and the attendant may consider his hands full for some days to come. We prefer to get a bottle with a proper india-rubber teat, but a quill wrapped round with worsted and thrust through a cork into a pint bottle will make a good substitute; but absolute cleanliness must be insisted on, or without any doubt the wretched little animal will be seized with diarrhoea, and our experience tells us for that there is little or no hope of cure for one so small. At first the feeding must take place every half-hour, and remember this must be night work too. There must be no shirking. A knowing man will soon be able to see when he may lengthen out the intervals between meals.

Cow's milk differs in some essentials from that of the mare, so cow's milk must be treated with a little water to reduce the caseine and fat, and with a little sugar to make it as naturally sweet as the mare's milk is. The proportion of water may appear large, but the young stomach is delicate, and over-richness in the diet would be fatal. One part water to two parts milk at first will be a suitable proportion, then one-fourth of water as the foal grows stronger.

See that the milk is freshly taken from the cow into a warmed vessel. Its own mother would provide it with warm milk. We have to take the place of the mother. Possibly few amateurs will believe what difference there is in milk. If it is possible to get a choice, take the milk of a young freshly calved cow in preference to one that is past her best. Were the foal fed naturally the fresh milk drawn from its mother would act as a laxative on the bowels; failing this a gentle enema of tepid water and a little glycerine would be equally effective.

We prefer this means to a dose of castor oil. It is the bowel that requires to be emptied, not the stomach (we might remark that an enema should find a place in every stable; many a valuable life may be saved thereby). If castor oil is given the dose must be small.

Early foals, that is foals born before their mothers have had access to green food, are more liable to obstinate constipation than those born later, when there is a full bite of grass. By the time the foal is two hours old, the bowels should have been relieved. If this is not the case help must be given. Try the enema first, and failing any activity then proceed with the oil. Should the oil not be effectual, send at once for the vet, as the case is beyond the power of the amateur.

We have got away from the subject of the first meal. Most foals, if strong and lively, will find their own way to the teat; but of course there are cases where the foal is backward at looking after its own interests. The attendant must be on the alert. If the teat be rubbed with a little milk the smell will usually attract the hungry

youngster. It should be watched for a few minutes to see whether it really is getting a meal. There are cases where the milk does not easily flow from the teat, or, indeed, where it will not come down at all. It is the worst of folly leaving these little details unattended to till the poor foal is getting hungrier and weaker every moment. Very little delay and the foal will be past recovery. Hence we see the necessity for having a really good man who thoroughly understands his business and the manifold requirements of young stock.

We find we have hardly got the foal more than a step or two on its life journey. There are several other points of great importance we would refer to, but they must stand over for a time.

WORK ON THE HOME FARM.

Farmers are never satisfied, and if they were the great British public would not be pleased, for it would not consider its farmer a true John Bull if he could find nothing to grumble about.

The agriculturist who complains of the present weather we should hardly blame, for the continuous rains must be very trying to the man who has a large acreage of land to prepare for Turnips and not too much time wherein to do the work.

We have spoken to several farmers this week and only one appears to be satisfied with the weather, and he is more of a stockowner or English rancher than an ordinary farmer, as we understand the term.

As a fact little work of any kind has been done. Wheat is partly hoed, or rather looked over, for few farmers do more than look over their Wheat nowadays. Barley and Oats, although both are backward, require the weeds removing from them. This must be done as soon as possible, but hands are very scarce and hardly to be had. The women of the village who used to be glad to earn a few shillings by wielding the hoe, now would scorn to do anything of the kind, and although one or two exceptions might be found, even these would decline to face the young corn with rain or even a heavy dew upon it. So the work has to be left undone or rushed over in a slipshod way.

Wherever we go we see ewes that have been through the washdyke but have seen none clipped. There has been no drying weather, and it is hardly warm enough yet, though June is very near.

We again hear of serious losses amongst young calves. They die from the effects of grey scour when they are two or three days old. This should be preventible. The complaint generally arises from indigestion through having too much milk irregularly. A newly born calf must have a strictly limited allowance of milk, but if scour does commence, give a couple of raw eggs and a dose of cholera mixture, and follow these by a dose of castor oil. We ourselves had heavy losses until we used these remedies, which have been entirely successful, but as we have intimated above, prevention is better than cure and much cheaper.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899.	May.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs	
Sunday	14	29.620	56.9	52.3	S.	53.4	63.1	49.6	89.7	45.2	0.402
Monday	15	29.399	48.9	47.3	N.W.	52.9	61.8	47.6	104.3	46.2	0.031
Tuesday	16	29.608	56.2	49.5	W.	52.4	62.1	47.4	111.2	42.9	0.372
Wednesday ..	17	29.775	54.6	48.7	W.	52.2	63.4	49.2	113.3	44.3	—
Thursday ..	18	29.915	60.4	54.4	S.	52.6	70.2	49.8	118.7	44.3	0.010
Friday	19	30.033	55.9	50.8	S.	53.8	66.6	47.2	115.0	42.8	0.058
Saturday	20	29.697	56.1	54.4	S.W.	54.1	64.3	53.7	104.1	48.8	0.223
		29.721	55.6	51.1		53.1	64.5	49.2	108.9	44.9	1.096

REMARKS.

14th.—Overcast day, dull at times; spots of rain at 2.30 P.M., gradually increasing to showers.

15th.—Steady rain from 5 A.M. to 10 A.M., then clearing and sunny afternoon.

16th.—Showers in small hours; bright breezy morning. Thunder and lightning at 1.40 P.M., heavy rain from 2 to 3.30 P.M., and showers later.

17th.—Gale and showers in small hours; windy and generally sunny day; cloudy evening.

18th.—Cloudy early; bright day; spots of rain at 4.30 P.M. and a shower at 5 P.M.

19th.—Fine, but little bright sunshine; slight showers at 4.30 P.M. and in the evening.

20th.—Gleams of sun early; showery morning and a storm rain at 11 A.M.; overcast after noon.

A wet week, with uniform but somewhat higher temperatures.—G. J. SYMONS.

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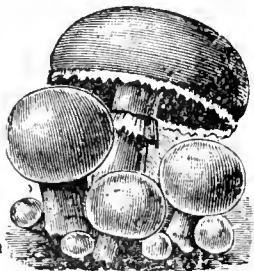
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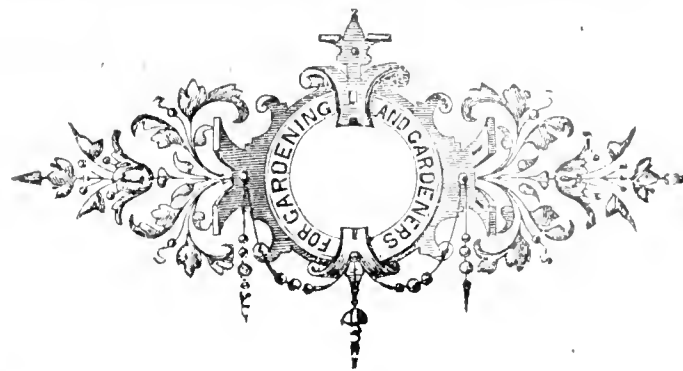
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Journal of Horticulture.

THURSDAY, JUNE 1, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

THE TEMPLE SHOW.

FOR the twelfth consecutive time the Temple Gardens have become the resort of horticulturists and the scene of their praiseworthy productions. Each year since the establishment of the exhibition it has grown in popularity, until it is now visited by a great multitude of persons interested in gardening, and has become one of the society functions of the year. In the acquirement of such a position for its annual display, the Royal Horticultural Society has cause for congratulation, and it cannot be doubted for a moment that the gatherings have done much to widen and deepen the love for gardens and gardening, and have thus served the purpose for which the rich and varied displays were inaugurated.

The Show now being held proves to demonstration that owners and growers of choice and rare plants and flowers, as well as of other products, are as anxious as ever to send the best evidences of their skill for the delectation of the thousands of visitors. The results of months of incessant attention are to be seen in the several marquees, and everyone will agree that such magnificent collections of plants and flowers could not be brought together under similar conditions elsewhere in this country. For it must be borne in mind that no money prizes are given, and it cannot therefore be said that the great patrons of horticulture and their gardeners who are staging so creditably are doing otherwise than laudably uniting to maintain the supremacy of British gardening.

Inexperienced visitors and casual observers may think that it is the work of a few days, or at most weeks, to make all the preparations that are necessary for this event. But this is not so. Careful study must be brought to bear months before by officials, and we know at least one gardener who has decided upon his exhibit for 1900, and is in fact already preparing his plants for that occasion. He has therefore to look forward to twelve months of thoughtful labour, and it will be a labour of love. The credit of the garden in his charge will be maintained; while the Royal Horticultural Society is strengthened by the strenuous efforts

of such men. There are happily many among the gardeners of England who are equally ready to respond to the call of duty, and with no thought for their own enrichment.

It has also to be noted that the great industry of horticulture is always splendidly represented at the Temple Shows. Plants from leading firms are seen, remarkable for their rarity, or for consummate skill displayed in their culture, and in having them in the best possible condition at the appointed time. Flowers in infinite variety are temptingly displayed, while early fruits and vegetables of unsurpassable quality for the season command general admiration.

But besides the organisers of the show and those who produce and arrange the collections that make the spectacle so delightful, there are others who must be accorded well merited recognition. These are the Benchers of the Inner Temple, who place their park-like gardens at the disposal of the Society, and there is no exaggeration in saying that, all things considered, there is no available place in the metropolis better fitted for the purpose. The gardens are readily accessible from all parts, and their situation is so well known that no one in London can have any difficulty in reaching his destination. The splendid lawns, the stately trees, the handsome buildings, and London's noblest boulevard all tend to increase the pleasure of a visit to the gardens at show time, when they pass for the nonce from the Temple of Law to the infinitely more beautiful Temple of Flowers.

The popularity of this first great summer show of the season increases year by year, and on this occasion the resources of the managers were taxed to the utmost to find room for the arrangement of the exhibits within the area at disposal, and if space were unlimited the Temple Shows of the R.H.S. would, large as they are, soon become as large again.

By the enterprise and skill of our leading professionals, the most noteworthy plants and beautiful flowers are brought together in superb condition; while the earliest and best of fruits and vegetables are not less meritoriously displayed in the Temple Gardens. There is, in fact, an exceptionally high average of excellence pervading the gathering, and it is, fortunately, seldom that mediocrity is descended to. Whether we look to the Orchid or the Rose sections, to the hardy flowers or the greenhouse and stove plants, to the fruits or the vegetables, we find the same evidences of cultural skill, judgment in selection, and taste in arrangement. The exhibition that opens to-day (Wednesday), and continues until Friday evening, is one of the grandest that it has been our lot to see, and we are confident that it will give pleasure to thousands of visitors.

On a previous occasion we have given the dimensions of the space in each of the five marquees, and as they remain the same year by year the necessity for doing so again is removed. Suffice it to say that vast as is the amount of tabling at command it would require to be enlarged almost thrice ere sufficient room could be found to meet all demands in full. This season the number of entries has increased very materially, and every individual applicant has had to be content with a reduction of upwards of 50 per cent. from the space for which he sought. This will convey to readers an idea of what dimensions the Temple Show would attain to if the amount of ground at the disposal of the Royal Horticultural Society were unlimited. It serves also to illustrate what an immense amount of work devolves on the officials in allocating the space so as to do justice to all exhibitors and to the public. We are glad to be able to say, ere commencing the detailed report, that the weather on Wednesday morning was bright and warm enough to bring forth visitors in their thousands.

ORCHIDS.

If the displays at the Temple Gardens are celebrated particularly for one section, pride of place must be accorded to the Orchids, which are unique for diversity, quality and quantity. Each year sees a magnificent collection contributed by professional and amateur growers, and the show that is now being held proves no exception to the general rule. True, we miss one or two names that spell super-excellence, but there are others who, if smaller, show in a manner that is creditable alike to themselves and to the Society they support. The whole of the central staging of the large tent is devoted to Orchidaceous plants, and the effect produced is brilliantly beautiful. Then in the next marquee we find other contributors, swelling the numbers and the quality of this portion of the exhibition. Not only do we see new hybrids and varieties, but the older and more familiar kinds are there in the best possible condition that can be attained to by excellent methods of culture.

The most prominent position has been secured by Messrs. B. S. Williams & Son, Upper Holloway, and it must be admitted that they have made admirable use of the space at their disposal. This firm almost invariably makes skilful use of Ferns and Palms, which interspersed amidst the Orchids certainly enhance the general effect. This is done at the Temple as usual. The Orchids comprise in the main species, hybrids, and varieties that are known to most orchidists, and all show good culture and capital judgment in staging. We observed as amongst the most conspicuous a handsome centre plant of *Cymbidium Lowianum*, flanked and taced with *Lælia purpurata* in variety, *Cattleya Mendeli*, *Odontoglossum crispum*, *O. excellens*, with several *Cypripediums*, *Oncidiums*, and *Dendrobiums*. The two plants of *Richardia Elliottiana*, for which space was found, were of rich colour in the spathe, and clean in the leafage.

For the first time the comparatively young firm of Messrs. Stanley, Mobbs, & Ashtor, Southgate, is represented, and they have well done their share towards the show. The group is of good size, and contains many Orchids of beauty and quality. Their flowers, borne on healthy plants, are rich in colour, heavy in substance, and fine in form. We have not space to individualise very much, so must be content with special mention of *Lælia purpurata*, *L. tenebrosa*, *Cattleya Mossiæ*, *C. M. Mrs. C. H. Feiling*, *C. Mendeli*, *Cypripedium Martensianum*, *C. grande atratum*, *Odontoglossum Andersonianum*, *O. crispum* in variety, *O. citrosum*, *Cymbidium Lowianum*, *Oncidium varicosum*, *Dendrobium Dearei*, *Epidendrum hastatum*, and others. This firm enhance the beauty of the group by two cork arrangements of *Odontoglossum crispum* and *Miltonia vexillaria* in variety. A white *Lælia purpurata*, named *Ashtonæ*, is a novelty.

Superb indeed are the many types of *Lælia purpurata* in the collection of Orchids contributed by the renowned Mr. J. Cypher, of Cheltenham, of whom we do not see nearly enough in London. As examples of culture these plants could scarcely be excelled, and the encomiums lavished upon them by visitors were thoroughly deserved. Not that these are the only Orchids utilised. There are many others of equal merit, and they include *Oncidiums sarcodes*, *varicosum* and *concolor*, *Cattleyas Warneri*, *Mossiæ*, *M. splendens*, and *M. grandiflora*, *Odontoglossums crispum* in variety, *Peseatorei*, and *luteo-purpureum*. Then there are *Lælia tenebrosa*, *Dendrobium Jamesianum*, *nobile magnificum*, and *thyrsiflorum*, *Miltonia Roezli*, *Cattleya citrina*, and many others of equal merit.

Yorkshire does not send us many Orchids, but those that come from Messrs. Charlesworth & Co., Heaton, Bradford, are always welcome, as they show us that the county of broad acres is equal to the call when required. The firm had a fair amount of tabling to occupy, and it is occupied well with a profusion of fine varieties of *Odontoglossum crispum*, *Miltonia vexillaria*, *Lælia purpurata*, *L. p. Russelliana*, *L. p. fulgens*; grand plants of *Cymbidium Lowianum*, *Cattleya Bowringiana*, *Odontoglossum Halli*, a few *Cypripediums*, *Dendrobium atro-violaceum*, *Cattleya Schilleriana*, *Lælia flava*, with others equally well known that we need not particularise.

Since Messrs. H. Low & Co. have become settled at Bush Hill Park, Enfield, they have been able to stage from their splendid collection of Orchids in excellent form. The plants evidently have all their requirements catered for, and are living examples of the treatment they receive being suitable. The growths are robust and the leaves glow with health and cleanliness. The firm's plants rise from a groundwork of *Asparagus*, which admirably serves its purpose in throwing into bold relief the handsome Orchids. Of these *Lælia purpurata*, *Cattleya Mossiæ*, *C. Mendeli*, *Dendrobium Bensoniæ*, *Odontoglossum crispum*, *Lælia tenebrosa*, *Oncidium concolor*, *Dendrobium Falconeri*, with a number of *Cypripediums* are prominent. *C. M. Bush Hill Beauty* is very handsome, and is quite distinct from existing varieties.

We should hardly recognise the Orchid department of the Temple Show if Sir Trevor Lawrence's plants were absent. Fortunately, however, such a contingency is scarcely likely to arise, as Mr. W. H. White, Sir Trevor's grower at Burford Lodge, is ever ready to do his part in maintaining the exhibition. Many of the Burford Lodge plants are such as are not commonly seen, even by orchidists, as they come within the category of botanical curiosities, and this makes the exhibit still more interesting. It is probable that from the time the Show opens until it closes there are persons examining and admiring the plants in the group from the President's gardens. Particularly attractive among the showier members of the group are *Vanda teres*, *Thunia Marshalliana*, *Miltonia vexillaria*, *Thunia Bensoniæ*, *Cattleya Mossiæ*, *Odontoglossum crispum* in splendid variety, *O. Pescatorei*, *Oncidium concolor*, *Masdevallia Mundyana*, *Cypripedium barbatum*, *Lælio-Cattleya Canhamiana*, *Lælia purpurata*, *Cattleya Mossiæ Wagneri*, *Cattleya Mendeli*, *Masdevallia Harryana miniata*, *Cattleya Mossiæ Grosseniana*, *Odontoglossum luteo-purpureum hystrix*, *Cypripedium Eleanor*, *C. Lawrenceanum*, *C. glanduliferum*, *C. Hookeræ voluteum*, *Phalænopsis amabilis*, *Epiphronitis Veitchi*, *Lælio-Cattleya eximia*, and others. Of botanical Orchids we may note *Masdevallia Gelseniana*, *caudata-Estradæ*, *Saccolabium gemmatum*, *Bulbophyllum elegans*, *Campanumæa uliginosa*, *Ornithocephalus grandiflorus*, *Polystachya bracteosa*, *Stelis species*, *Restrepia trichoglossa*, *Restrepia species*, *Saccolabium miniatum*, and *Polystachya Zambesiaca*.

As an amateur enthusiast in Orchid culture, especially *Odontoglossums*, Mr. W. Thompson, Walton Grange, Stone, Staffs, must take a high position, and Mr. W. Stevens, his gardener, manages the plants with the knowledge derived from ripe experience of their likes and dislikes. On this occasion the plants of *Odontoglossum luteo-purpureum*, with an immense spike, *O. crispum Arthur*, *O. triumphans hybrid King Alfred*, *O. crispum Arthur Brisco*, *O. Coradinei Roehelini*, *O. crispum Prince Charming*, *O. Andersonianum alba maculosum*, *O. Pescatorei*, *O. Wilekeanum Lowi*, with others, the whole having superbly flowered *Cochlidia Noezliana* in the foreground, are a great credit to both owner and grower.

With an ability for growing Orchids well Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, combines skill in arrangement, with the natural result that the Clare Lawn group is always attractive. The plants of *Dendrobium thyrsiflorum*, *Lælia purpurata*, *Cymbidium Lowianum*, *Cypripedium callosum Sanderæ* (fig. 99), *Staurosis gigantea*, *Cypripedium Lawrenceanum*, *Cattleya Louryana*, *Miltonia Roezli*, *Odontoglossum crispum* in variety, *O. Ruckerianum*, *O. Pescatorei*, *Cattleya Skinneri alba*, *Thunia alba*, *Cattleya superba splendens*, *Masdevallia Lindeni*, *M. Harryana*, *Cœlogyne Schilleriana*, *Odontoglossum excellens*, *Cymbidium Devonianum*, *Trichopilia*

tortilis, *Cypripediums* W. H. Young, with *Godefroyæ* and *bellatulum album*, are splendid.

The only Orchid exhibitor from Hampshire at the Temple this year is Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak, Bishopstoke, who has arranged a capital group occupying a fair amount of space. The stand is bright with flowers of excellent quality and well diversified. The plants are healthy and clean, and comprised *Cattleyas*, *Dendrobiums*, *Odontoglossums*, *Cypripediums*, *Oncidiums*, *Lælas*, and a few others. Though rather flat the collection produced a good effect.

The small exhibit of Orchids contributed by Mr. W. Buckie, gardener to M. S. Cooke, Esq., Tankerville, Kingsdon Hill, is bright and attractive. *Masdevallia Harryana* are excellent, as are *Lælia purpurata*, *Odontoglossum crispum* in variety, *Miltonia vexillaria*, *Odontoglossum cirrhosum*, *Cattleya Mossiæ*, and others.

Mr. Lupton, gardener to J. Rutherford, Esq., Blackburn, Lancs, stages Orchids occasionally at the Drill Hall, but so far as we can recollect this is his initial visit to the Temple. His plants mainly comprise *Cattleya Mossiæ* in variety, all splendidly grown. *Cattleya Ruth* and *C. Mossiæ* John Shulz were particularly striking.

There are several amateur Orchid growers in the northern suburbs of the metropolis, and on the present occasion they are represented by Mr. G. Cragg, gardener to W. C. Walker, Esq., Percy Lodge, Winchmore Hill. His collection of well grown Orchids, rising from a groundwork of Ferns, small-leaved *Caladiums*, and *Asparagus* looks handsome, especially as the stager had exercised some considerable taste in arranging the plants. *Brassia verrucosa*, *Lælia purpurata*, *Cattleya Skinneri*, *Oncidium Marshallianum* superbum, *Dendrobium Bensoniæ*, *Odontoglossum crispum*, *O. Pescatorei*, *Oncidium concolor*, *Cattleya citrina*, *C. Acklandæ*, *Cypripedium Lawrenceanum*, and *Lycaste cochleatum* are all well shown.

Messrs. J. Backhouse & Son, Ltd., York, seldom find their way to London, but when they do send exhibits these are well worth the seeing. Their group in the Orchid tent is splendidly arranged, and in containing various plants gains distinctly in effect. The Orchids include *Cypripediums*, *Odontoglossums*, *Lælias*, *Cattleyas*, *Oncidiums*, *Dendrobiums*, and *Sobralias*, with Ferns, *Asparagus*, Palms, small *Crotons*, *Dracæna Sanderiana*, and others. Two black cases by their formality somewhat marred the effect.

Though Messrs. F. Sander & Co., St. Albans, pass from the large marquee to the smaller one they lose nothing in the moving. The St. Albans Orchids are of such excellence that a mere question of position does not minimise the importance of the exhibit in the slightest degree. The plants bear the impress of health in the leaves and in the flowers, and everyone interested in Orchids must spend some time at the group. They occupy a considerable length of tabling with a diversified selection of plants that will maintain the firm's high reputation. It is pleasant to see that some taste has been displayed in arrangement. Where there is so much of excellent quality it is difficult to select, but we may note *Cypripedium Exul*, *Cattleya Mossiæ*, *C. Lawrenceanum*, *Lælia purpurata*, *Cypripedium callosum* Sanderæ, *C. conco-bellatulum*, *Lycaste Mooreana*, *Thunia Marshalliana*, *Odontoglossum ramosissimum*, *Masdevallia Veitchi*, *Dendrobium atro-violaceum*, *Sophrolælia Marriottiana*, *Odontoglossum crispum* in charming variety, *Cœlogyne Dayana* in superb form, *Bulbophyllum barbigerum*, *Miltonia vexillaria* in variety, with others.

Attractively beautiful are the *Miltonias* that have been sent to the Temple from Belgium by Mons. Lucien Linden of Brussels. The colours cover a wide range, and are singularly pure in tone. There are white varieties and all intermediate shades through rose to purplish-rose. *Jupiter*, *Fernande*, *Nelly*, *La Rose*, *marginata*, and *delicatesse* are particularly striking. In addition to these there are several *Odontoglossums* of more than average beauty.

A small group of Orchids is contributed by Mr. J. Clarke, gardener to Ludwig Mond, Esq., Avenue Road, Regent's Park. The plants are well grown, and carry flowers of capital quality, but the arrangement left much to be desired. The kinds included *Cymbidium Lowianum*, *Dendrobiums thyrsoflorum* and *densiflorum*, *Odontoglossums crispum* and *citrosum*, with *Cœlogyne pandurata*, *Cattleyas Mendeli* and *Mossiæ* in variety.

ROSES.

The collections of Roses are always a great feature, and this season's exhibits fully maintain the high standard that has been reached on previous occasions. Not only are the collections complete, but displayed in an artistic manner. The now popular *Crimson Rambler* plays an important part in almost every exhibit, and lends itself readily in relieving the density of many of the other plants. The exhibits are staged or grouped in different parts of the tents, and although many similar varieties are met with in each exhibit, yet there are fresh and new features in all of them; and it is doubtful if a better display of Roses has ever been shown at the Temple than are there this season.

Messrs. Paul & Son, Cheshunt, occupy the same corner in the large tent that they have occupied in former years. The whole exhibit is remarkable for its freshness and admirable grouping. The chief varieties employed, as standards and trained plants, are *Crimson Rambler*, *Clara Watson*, *La France*, *Margaret Dickson*, *White Baroness*, *Rev. Alan Cheales*, a good new Rose sent out by the firm. The *Carmine Pillar* is grand, containing perfect wreaths of flowers. The best varieties as seen in the bush plants are *Caroline Testout*, *Mrs. Paul*. The new *Psyche* is very prominent, as are *La France*, *Madame de Watteville*, and *William Warden*.

The exhibit of Roses by Mr. C. Turner, Slough, is, as usual, in first

rate condition and beautifully arranged, the group in fact is noteworthy for the taste displayed in arranging. Foremost must be mentioned the *Crimson Rambler* specimens, which had been utilised to hide the tent poles; this they did admirably, with the help of a few Palms and Bamboos. The Roses are in capital condition, especially *Mrs. J. Laing*, *Juno*, *Ulrich Brunner*, *La France*, *Madame Victor Verdier*, *Caroline Testout*, *Souvenir de M. Eugène Verdier*, *Perle d'Or*, and *Madame A. Chatenay*. The group is edged with Ferns, making a good foreground.

The celebrated firm of Messrs. Wm. Paul & Son, Waltham Cross, also have the same prominent position in the large tent they always occupy, and worthily too, for the exhibit on this occasion surpasses all previous exhibits even at the Temple Show. Although the space is utilised to the fullest extent, there is no suspicion of overcrowding, the standard trees in pots carrying off the stiffness so common in Rose exhibits. The new climbing *Mrs. W. J. Grant* came in for a good share of attention, as did the new hybrid Tea *Tennyson*, a capital seedling from *White Lady*, of beautiful flesh colour. *Aurora*, *Marquis Litta*, *Mrs. Sharman Crawford*, *Ella Gordon*, *Enchantress*, *Spenser*, *Crimson Queen*, *Souvenir de President Carnot*, *Elise Fugier*, *Duke of York*, *Clio*, and *Mrs. John Laing* are very notable. The entire exhibit appears to be a forest of Roses.

Mr. W. Rumsey, Joynings Nursery, Waltham Cross, also adds to the display of the queen of flowers by an exhibit which occupies a large space in the centre of the tent. The specimen plants fully maintain Mr. Rumsey's reputation as a Rose grower. The boxes of cut blooms are the chief features of his exhibit, although plants are represented in many varieties. The *Maréchal Niels*, *Reine Marie Henriette*, *Mrs. J. Laing*, *The Queen*, and *Niphetos* are good, the whole being arranged with Ferns and Palms, giving it a pleasing effect.

The Canterbury Roses, now so justly celebrated from Mr. G. Mount, are well up to his usual standard. The blooms on long stems are always a feature of his displays, and such is the case on this occasion, the wood and foliage plainly testifying to the healthy vigorous state of his plants. *Crimson Rambler* Roses in pots, in company with *Acers*, formed an attractive background, while the cut flowers are deserving of all praise. *Maman Cochet*, *Mrs. John Laing*, *Prince Arthur*, *Général Jacqueminot*, *Anna Ollivier*, *Ulrich Brunner*, *Niphetos*, *Captain Hayward*, *Bridesmaid*, *Mrs. W. J. Grant* (grand), *Catherine Mermet*, *Comte Liabaud*, and *Baroness Rothschild*. This exhibit constitutes one of the finest exhibits of cut Roses ever seen in the Temple, and it is doubtful if Mr. Mount has ever made such an effective display before.

Mr. G. W. Piper, Uckfield, Sussex, again stages his new Rose, *Sunrise*, in excellent form. The buds, combined with the coppery foliage, have quite an artistic appearance; it is a Rose that will be much sought after when it becomes known. Mr. J. Russell, Richmond, exhibited a bank of Rose growing in 5-inch pots, which are very attractive from a decorator's point of view. The best forms are *La France*, *Mrs. J. Laing*, *Ulrich Brunner*, *Captain Christy*, and *Baroness Rothschild*.

PLANTS AND FLOWERS.

It is only on occasions like the Temple Show that the plant lover can see such remarkable collections. The variety is bewildering. Here we have a group of specimen *Caladiums*, next the eye rests on a collection of *Clematises* trained and covered with their large showy flowers; then, again, we see the groups of rich *Rhododendrons*, *Begonias*, herbaceous plants in great variety, hardy cut flowers, and so on through each tent. The restrictions placed on the space of the exhibitors have undoubtedly prevented the repetition of exhibits, for each exhibitor endeavours to produce something that will mark him from his compeers.

Immediately on the left on entering the large marquee the exhibit of Messrs. G. Jackman & Sons, Woking, calls for attention, for the firm this year has grouped a collection of *Clematis coccinea* hybrids. The plants are large, trained in balloon shape, with good healthy foliage and plenty of flowers; the exhibit is attractively displayed with foliage plants and Ferns. *Duchess of York*, a pale flesh colour; *Duchess of Albany*, *Admiration*, *Countess of Onslow*, and *Grace Darling* are conspicuous for their distinct colours and free-flowering propensity.

A fine collection of Palms and decorative plants is exhibited by Mr. W. Iceton, Putney. The Palms are the picture of health, and well developed; indeed the names of *Iceton* and Palms are inseparable. The remainder of the exhibit is composed of large *Araucaria excelsa*, *Japanese Maples*, *Caladiums*, *Dracænas*, *Lilium Harrisii*, beautiful *Heaths*, *Hydrangeas*, and *Lily of the Valley*, forming a very interesting display.

The gorgeous *Rhododendrons* from Mr. J. Waterer, Bagshot, claimed much attention from the visitors; they form such a pleasing contrast to the aristocratic Orchids and delicate *Caladiums* that one could almost fancy oneself in Hyde Park. The standards and bushes have been timed for the show almost to a day, and are a credit to the growers. Such varieties as *Duchess of Connaught*, *Cynthia*, *Gomer Waterer*, *Mrs. J. Kelk*, *Pink Pearl*, *Sappho*, *Mrs. Tom Agnew*, *Francis B. Hayes*, and *John Waterer* will convey some idea of the excellent quality.

Again Messrs. Smith & Co., Worcester, demonstrate the fact that *Clematises* can and should be grown for early summer decoration; their specimen plants in the past are well known to the horticultural world, and on this occasion the firm contributes another display that calls for admiration from all beholders, whether from a grower's point of view or from the ordinary flower lover. The chief forms are *Belle of Woking*, *Lawsoniana*, *Mrs. G. Jackman* with its pure white flowers, *Excelsior*, *Lady Caroline Nevill*, *Marie Lefebvre*, snow white *Jackmanni*, *Countess of Lovelace*, and *Madame Edouard Andrieu*.

The West End firm of Wills & Segar, South Kensington, so noted as decorators, arrange a choice collection of plants, such as giant Palms, which form an excellent background to a remarkable group of choice

foliage plants; every plant can be clearly seen, though at the same time the groundwork is well filled in. The most noticeable subjects are *Aloeasia argyrea*, a fine specimen, *Dracenas Godseffiana* and *Goldiana*, with perfect plants of *Nidularium fulgens*, *Phrynium variegatum*, and a number of *Anthuriums*, *Marantas*, *Begonias*, and such plants. A pleasing edging was formed with dwarf growing plants.

A splendid collection of *Caladiums* are grouped by Messrs. J. Laing and Sons, Forest Hill, and form a most imposing exhibit. The plants in all their varied tints are relieved by good specimens of *Cocos plumosus* as a background; needless to say, the specimens are in first rate condition, the leaves well developed and the colouring as it should be, bright and fresh, such varieties as *Alexander III.*, *Illustrious*, *Sir Julian Goldsmid*, *Golden Queen*, *Ladas*, *Rose Laing*, and *Gaspard Gruyer* form the chief features, while the little *C. argyrites* and *Maidenhair Fern* make a good front.

A gigantic exhibit of *Caladiums* is to be seen from Chelsea, and it is doubtful if Messrs. James Veitch & Sons have ever presented a better one to the annual frequenters of the Temple Show. The large plants with their perfect foliage, tastefully arranged with a groundwork of Ferns and Grasses, form an exhibit worthy in every way of the grower and exhibitors alike. The most conspicuous forms are *Marquis of Camden*, *Louis Van Houtte*, *Madame J. Box*, *Sir Henry Irving*, *Rose Laing*, *Baron A. de Rothschild*, *Madame Schmidt*, and *Gaston Chandon*. Every plant is well displayed, and the whole harmonises beautifully.

Messrs. Cutbush & Son, Highgate, worthily occupy a prominent position with a variety of plants, both flowering and foliage being well represented. A lofty background of Palms enables the smaller plants to be displayed to the best advantage. Conspicuous are a group of *Calla Elliottiana* with fine spathes of golden yellow. The *Malmaison Carnations* are also very attractive, as well as the decorative plants of *Crimson Rambler Rose*, hybrid *Azaleas mollis* and *rusticus*, and small plants of the *Otaheite Oranges* covered with fruit. Three large pyramids of *Carnations* in good varieties relieve the front of the group, while the *Malmaison Carnations* *Princess of Wales* form a beautiful groundwork, the groups of *Crimson Rambler Roses* and *Spiraea* are very effective. The whole is one of the finest features of the large tent.

Mr. C. Blick, gardener to Martin Smith, Esq., Hayes, Kent, stages a group of his well known *Carnations* in splendid style. The flowers are large and well coloured, while the foliage can only be classed as excellent. The chief varieties are *Churchwarden*, *Mrs. de Satge*, a large rosy red, and *Baldwin*, a monster Pink. The chief feature, however, of the exhibit is some excellent plants of a new yellow variety called *Cecilia*, a large flower, very pure in colour, and of good form. Other good varieties are *Morae Hutchinson*, *Mrs. Trelawney*, and *King Oscar*.

Messrs. Fisher, Son & Sibray, Ltd., Sheffield, occupy a space in the large tent with a group of plants arranged artistically. Its chief features are *Laelias purpurata Russelliana*, *L. purpurata alba*, *Cypripediums* in variety, *Anthuriums*, some well coloured *Crotons* such as *Delightful*, *Aigburth Gem*, *Rodeckianus*, *Miss Buister*, and *Golden King*, with Palms and a variety of other foliage plants, certainly a fine northern exhibit.

Mr. Chas. Turner, Slough, presents a group of well flowered *Azaleas*, that recalls the exhibitions of twenty years ago. The plants are well displayed in a bed of foliage plants and Ferns. *Charmer*, *Grandis*, *Roi Hollande*, *Duchesse de Nassau*, *Eggebrechti*, and *Mrs. Turner* form the chief varieties in the exhibit.

From Messrs. J. Veitch & Sons, Ltd., come a pretty and attractive group of hardy flowering and foliage shrubs, which seem very popular with the visitors. The hardy Bamboos and dark coloured *Acers* effectively screen the tent, and make a good background. The huge spikes of *Eremurus robustus*, *Elwesianus*, and *himalaicus* are conspicuous objects. The *Wistarias* also contribute an uncommon colour, while the standard forms of *Hydrangea paniculata grandiflora* are effective. The *Azalea mollis* and its hybrids also are bright, as are the plants of *Philadelphus Lemoinei*, *Boule d'Argent*, *Syringa*, *Madame Lemoine*, and the unique *Hydrangea Mariesi*, all being included in this attractive exhibit.

Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood, contribute to the *Caladium* exhibits by a group of large, well-grown specimen plants, which are remarkable for their freshness and bright colouring; chiefly to be noted are *fastuosum*, *Lady Mosley*, *Silver Cloud*, *Mrs. Harry Veitch*, *Duke of Teck*, *Mrs. W. E. Gladstone*, *Madame Mitjama*, *Oriflamme*, and *Michael Buchner*, an exhibit worthy of the position it filled.

Mr. Chapman, gardener to Captain Holford, Westonbirt, Tetbury, stages six of his hybrid *Hippeastrums*, which form a distinct feature at this late season. The variety *Desmond*, a white ground with rose markings, is very conspicuous; *Flying Fox*, a deep crimson, and *Trident* are also good.

Mr. G. J. Hunt, gardener to Pantia Ralli, Esq., Ashted Park, Epsom, contributes a display of well-grown *Caladiums*, interspersed with *Maidenhair Ferns*. His most notable specimens are *Sir Julian Goldsmid*, *B. S. Williams*, *Willfred Marshall*, and *Baron A. de Rothschild*.

Messrs. Sutton & Sons, Reading, stage an attractive exhibit of *Calceolarias*, comprising their strains of *Perfection*, *Spotted Mammoth*, and *Cloth of Gold*. The plants are dwarf and sturdy, while the individual blooms are very large, and the colours, markings, and shadings admirable. The *Nemesias* exhibited by the same firm attract a large amount of attention from the visitors. The new hybrids are a decided advance on the older type, inasmuch as they present a greater diversity of colouring, the blue form being quite a novelty. The older form of *N. strumosa Suttoni* is also well staged, the crimson and orange flowers being bright and attractive, a very appropriate method of popularising these annuals.

Mr. John Russell, Richmond, sends a display of hybrid *Azalea mollis* and *A. rusticus*. The well-known *Anthony Koster*, with its golden blossoms, *Byron*, *Daviesi*, *Edison*, and *Alma Tadema* are attractive, as are *Norma*, *Praxitele*, and *Emil Liebig*.

Messrs. W. Fromow & Son, Chiswick, have a pleasing change in a group of *Acers*, which are attractive and pleasing to the eye. The chief species and varieties are *A. palmatum crispum*, *p. reticulatum*, *laciniatum purpureum*, *dissectum ornatum*, *d. palmatifidum*, *sanguineum variegatum*, *sanguineum*, and many others. The plants are grown in small pots, and are admirable.

Messrs. T. Cripps & Son, Tunbridge Wells, who are noted for their ornamental foliage trees, grouped an excellent collection of *Acers*, beautifully arranged so as to form a good contrast in foliage in a tent where there is so much colour. These collections are most attractive.

The new and rare plants from Messrs. F. Sander & Co., St. Albans, contain many interesting and beautiful specimens. Perhaps the most attractive are the *Heliconia Sanderi*, a plant with beautiful variegated foliage; also a dwarf *Juniperus* named *Sanderi*. With these are the well known *Dracena Sanderiana* and *Carnations Ivanhoe*, *J. Coles*, and *Lily Measure*, all of the *Malmaison* type. From Mr. N. R. Hoffman, Thurlow Lodge, Thurlow Road, West Dulwich, comes a collection of *Caladiums*, all well grown, and tastefully arranged with *Maidenhair Fern*.

Messrs. T. S. Ware & Co., Tottenham, occupy a large space with a capital collection of single and double *Begonias*. The plants are dwarf and sturdy, and the blooms as large as one could desire, besides carrying a wealth of flowers very seldom seen on such plants; probably one of the finest exhibits of *Begonias* ever staged in the Temple Show or elsewhere. Those that are specially noteworthy are *Miss Mary Pope*, *Miss Bella Tait*, *Miss Alice Tait*, *Miss A. Beer*, *Prima Donna*, *Duke of Devonshire*, *Mr. R. Lawford*, *Lord Rosebery*, *Princess of Wales*, *Masterpiece*, *Her Majesty*, *Miss Barbara Ray*, and *Eclipse*. It would seem somewhat invidious to name more, but they really deserve it, and the grower should feel proud of his skill, as evinced at this exhibition, for it will do much to increase Messrs. Ware's prestige in this particular department.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, comes out in strong force with a display of *Begonias* that will add to his reputation as a grower and producer of a first-class strain. He is already noted for the able manner in which he arranges his exhibits, and on this occasion he has reason to be proud of his success. The single forms are exceptionally large with plenty of substance. The varieties that are most striking are *Admiration*, *Walter Smith*, *Hero of Omdurman*, *Mrs. E. Beckett*, and *Snowdrift*.

The name of Laing has been so long associated with the *Begonia* that it seems almost unnecessary to allude to the present standard of perfection which has been reached by the firm, suffice it to say that the strain still occupies one of the leading positions in the *Begonia* world. The double varieties are *Picotee*, *Duke of Fife*, *Duke of Sutherland*, *Lady Rothschild*, *Duchess of Sutherland*, and *Lady E. Spencer Churchill*. The single *Begonias* are large and very varied in colouring, the groundwork of Ferns and *Caladiums* render the exhibit attractive and pleasant.

The Swanley firm of Messrs. H. Cannell & Sons also contributes *Begonias* in great variety. The plants are well staged and arranged. The exhibits of *Cannas* and *Gloxinias* also form attractive features of this exhibit. The *Begonias* are dwarf and sturdy, and include such varieties as *Lady Lettie Grosvenor*, *Lady Grosvenor*, *cristata*, *Future King*, *Lady Camden*, *Mr. Ricardo*, and *Miss Courtney*. The *Cannas* are remarkably fine, the blooms being large and in good condition. The best varieties are *Mad. Pichou*, *Beauté Poitevine*, *Burbank*, *Florence Vaughan*, *Robert Christie*, *Duchess of York*, *Sister Dera*, and *Queen Charlotte*. The *Gloxinias* are large and in the pink of condition, the colours vivid, and the markings exquisite.

The exhibit of Messrs. Barr & Sons, Covent Garden, occupies the whole of one side of a tent with a gigantic collection of hardy flowers. Entering the door on the left, we meet a large collection of rock and alpine plants, and a stand of rectified and breeder Tulips in large masses, also on the orthodox boards. The *Darwin Tulips* are also much admired. In the collection of herbaceous flowers, the *Oriental Poppies*, *Pyrethrum Firefly*, *Aquilegia hybrids*, *Sweet Peas*, and *Ixias* form attractive features. The latter form a good collection, which embraces *Snowdrop*, *Nelsoni*, *Azurea*, *Viridiflora*, *Brutus*, *Emperor of China*; *Gladioli insignis*, and *The Bride* were also good. The *Spanish Irises* deserve a word of mention, for they are very varied and bright, as are also the *germanica* and *pallida* types, a truly gigantic display even for Messrs. Barr.

Mr. Maurice Prichard, Christchurch, Hants, stages a choice display of herbaceous and alpine plants in a fresh clean condition; the arrangement is also good. *Pyrethrums*, *Aquilegias*, and *Irises* are well to the fore, while *Dodecatheon Lemoinei*, *Papaver Blush Queen*, *Sedum virens monstrosum*, *Saxifraga granulata plena*, *Geums* in variety, and a host of other hardy plants render yeoman service to this beautiful exhibit.

Mr. A. Perry, Winehamore Hill, N., enriches the show with a collection of hardy flowers, chief of which are *Pyrethrum Mrs. Bateman Brown*, *Polemonium himalaicum*, *Parrot Tulips*, *Phlox Vivid*, a large basket of *Genm Heldreichi* in capital condition, the yellow *Thermopsis montana*, *Iris Susiana*, and *Globularia vulgaris* with many others contribute to the display of this exhibit.

Messrs. Waveren & Kruyff, Sassenheim, Holland, send some of their *Astilbe Spiraeas*, which are much admired. Those exhibited are *Dr. Cattie*, *W. E. Gladstone*, *H. Witte*, and *Professor Suringar*. These are hybrids of *S. astilboides* and *S. compacta*, and undoubtedly possess great value as decorative plants, for they are intermediate between the two forms.

Messrs. T. S. Ware, Ltd., Tottenham, also stage a collection of hardy flowers, which contains *Ononis rotundifolia*, hybrid *Aquilegias* in great variety, *Pæonias*, *Dodecatheons* in good style, *Geums*, *Primulas*, *Spiræas*, and *Liliums*. The exhibit is well arranged, and forms a pleasing change to some of the other exhibits.

Messrs. W. & J. Brakenhead, Sale, near Manchester, again delight the visitors with a choice collection of Ferns. The plants are small, but large enough to show their true characters. The hardy species and varieties are well represented. The greenhouse species, such as *Gymnogramma schizophylla* *superba*, *G. Martensi* *grandiceps*, *Davallia aculeata*, *Lomaria aspera*, and Filmy Ferns complete the display.

Messrs. Paul & Sons, the Old Nurseries, Cheshunt, utilise the space at their disposal for hardy flowers to the best advantage, and their exhibit is meritorious. The *Rhododendrons* *Fortunei* crossed with garden hybrids have formed a new race. The best of those exhibited have larger flowers and trusses than the ordinary garden hybrids. The collection of *Lilacs* also attracts much attention. The varieties are *Souvenir de L. Spath*, *Mathieu Donbasle*, *Madame Kreuter*, *Alphonse Levalle*, and *President Grevy*. Some pretty rock plants, with hardy *Cypripediums* in baskets, are pretty.

Messrs. G. Jackman & Son, Woking, have a collection of hardy flowers, which contains many useful plants. *Anemone sylvestris flore-pleno* is noticeable, as are the *Pyrethrums*, and a collection of Tree *Pæonies*, *Trollius*, *Irises* of the *pallida* type.

An attractive exhibit comes from Messrs. R. Wallace and Co., Colchester, chiefly composed of *Ixias* in excellent variety. *Iris florentina* *Princess of Wales*, *Mayor*, *Susian*, and a collection of *I. hispanica* are clean and fresh. The *Sparaxis* *Fire King* are exceedingly fine, and prove interesting to visitors. The new Japanese *Pæonies* are brilliant and charming, and a collection of hardy *Cypripediums* should be noted, which contain *C. pedatum* *acaule*, *occidentale*, *calceolus*, and *parviflorum*. At the end of the tent the same firm makes a capital show of *Liliums*, *Ornithogalum arabicum*, with *Eremurus himalaicus*, hardy *Bamboos*, *Acers*, and other foliage plants. Mr. R. C. Sanders, gardener to A. de Rothschild, Esq., Tring, exhibits two baskets of *Carnation* *Halton*, a bright red variety.

The *Phyllocacti* hybrids from Messrs. Jas. Veitch and Sons have been displayed at the Temple Show on former occasions, but the present exhibit surpasses in numbers and quality any of its predecessors. The remarkable variation in colouring is really surprising, ranging as they do from creamy white, through all the shades to bright crimson. A few of the most beautiful forms are noted—*Nysa*, a rich crimson, *Marsus*, pink, *J. T. Peacock*, *Sylvia*, *Delicatus*, *Vesta*, and *Agatha*. The collection also contains many unnamed seedlings.

Mr. Poupart, Marsh Farm, Twickenham, sends some fan-shaped sprays of *Lily of the Valley* *Victoria*; the bells are large and pure in colour, and they have been grown in the open air at Twickenham. A good distinct variety.

Messrs. J. Hill & Son, Edmonton, exhibit a collection of Ferns in their well-known style. The specimen plants include *Asplenium caudatum*, *Platynerium aleicorne*, a splendid clump, *Osmunda palustris*, *Goniophlebium subauriculatum*, and *Davallia tenuifolia* *Veitchi*, while the lower part is composed of a great variety of choice specimens in small pots, those with tinted foliage being especially good. Mr. W. Sydenham, Tamworth, stages a collection of Fancy Pansies and Violas. Among the former are *Tom Waters*, *Bernard Doulton*, *David Rennie*, and *Mavourneen*, while the latter are represented by good sprays of *Lark*, a fine new variety; *Symphony*, an edged variety; *Melampus*, a good yellow; Mrs. R. K. Mitchell, *Amy Barr*, *Ophelia*, *Pembroke*, *Nellie Cruse*, and *King Cup*.

Mr. W. Bull, King's Road, Chelsea, has a few good plants of *Dracæna* *Victoria*—a fine form; the flowers are beautifully coloured, and the plant is sure to be useful to decorators. Messrs. W. Paul & Son, Waltham Cross, send nine good boxes of *Rhododendron* blooms. The best varieties are Mrs. R. S. Holford, *Blandyanum*, *Lord Palmerston*, Mrs. Mangles, and *Floretta*; also a few double *Lilacs*, and ornamental foliage growth, which form a pleasing contrast to the flowers.

Messrs. J. Laing & Sons, Forest Hill, have a beautiful strain of hybrid *Streptocarpus* in a large variety of colours, many of them appearing quite new. The exhibit is arranged with plenty of *Maidenhair* Fern and *Isolepis gracilis*, and is certainly attractive; also a collection of new *Dracænas*, *Crotons*, *Aralias*, and other foliage plants. Mr. T. Jannock, Dersingham, Norfolk, presents a grand display of *Lily of the Valley*, the *Fortin* variety, which is certainly larger and superior to the ordinary *Berlin* variety; the bells are very white and deep, and it is a variety that will be popular when it is more general.

The Jadoo Company, Exeter, stages a quantity of plants to illustrate the value of Jadoo fibre for plant culture. The plants are well grown, and certainly a recommendation to the fibre. Messrs. J. Backhouse and Son, Ltd., York, follow with a large exhibit of rock and alpine plants, for which the firm is justly famed. The most prominent are *Saxifraga Stansfieldi*, *Darlingtonia californica*, *Armeria Lancheana*, *Saponaria ocymoides*, and *Gentiana acaulis coelestina*. A most interesting exhibit.

Messrs. A. W. Young & Co., Homedale Nursery, Stevenage, have a creditable exhibit of hardy flowers, consisting of herbaceous plants, also

rock and alpine plants. Messrs. W. H. Rogers & Sons, Limited, Red Lodge Nurseries, Southampton, stage a collection of *Rhododendrons* and *Azaleas* arranged with *Maidenhair* Fern. The trusses are good, and in fresh condition. The chief varieties are *George Hardy*, a splendid white, *album grandiflorum*, *Princess Mary of Cambridge*, *Helen Rogers*, a distinct variety, *delicatissimum*, *Mammoth*, and *Gem*, while bunches of *Azalea pontica* relieve the gorgeousness of their compeers.

Messrs. T. S. Ware, Ltd., Tottenham, also contribute an exhibit of *Pyrethrums*, both single and double varieties, with a few other hardy flowers. The *Pyrethrums* are very bright and fresh looking. The Guildford Hardy Plant Co., Guildford, has an extensive exhibit of rock and alpine plants, also a collection of herbaceous plants, beautifully arranged, which include some pretty *Alpine Auriculas*, *Anemone sylvestris*, *Gentiana acaulis* and *vena*, with a whole collection of Alpines enough to satisfy anyone. The absence of labels no doubt enhances the effect, but it is doubtful whether the visitors appreciate it.

Messrs. J. Cheal & Sons, Crawley, have a collection of *Violas* and other hardy flowers; in the former, *Amy Barr*, *Florizel*, *Princess Louise*, *A. J. Rowberry*, *Border Witch*, *Bridesmaid*, and *True Blue* are most conspicuous. Messrs. R. H. Bath, Ltd., Wisbech, have a good variety of flowers that are well arranged, and include a few *Dahlias* of the *Cactus* type, some splendid *Pansies* of the *Empress* strain; huge bunches of *Carnations* and *Irises* are also in good form, making a showy exhibit that is much appreciated.

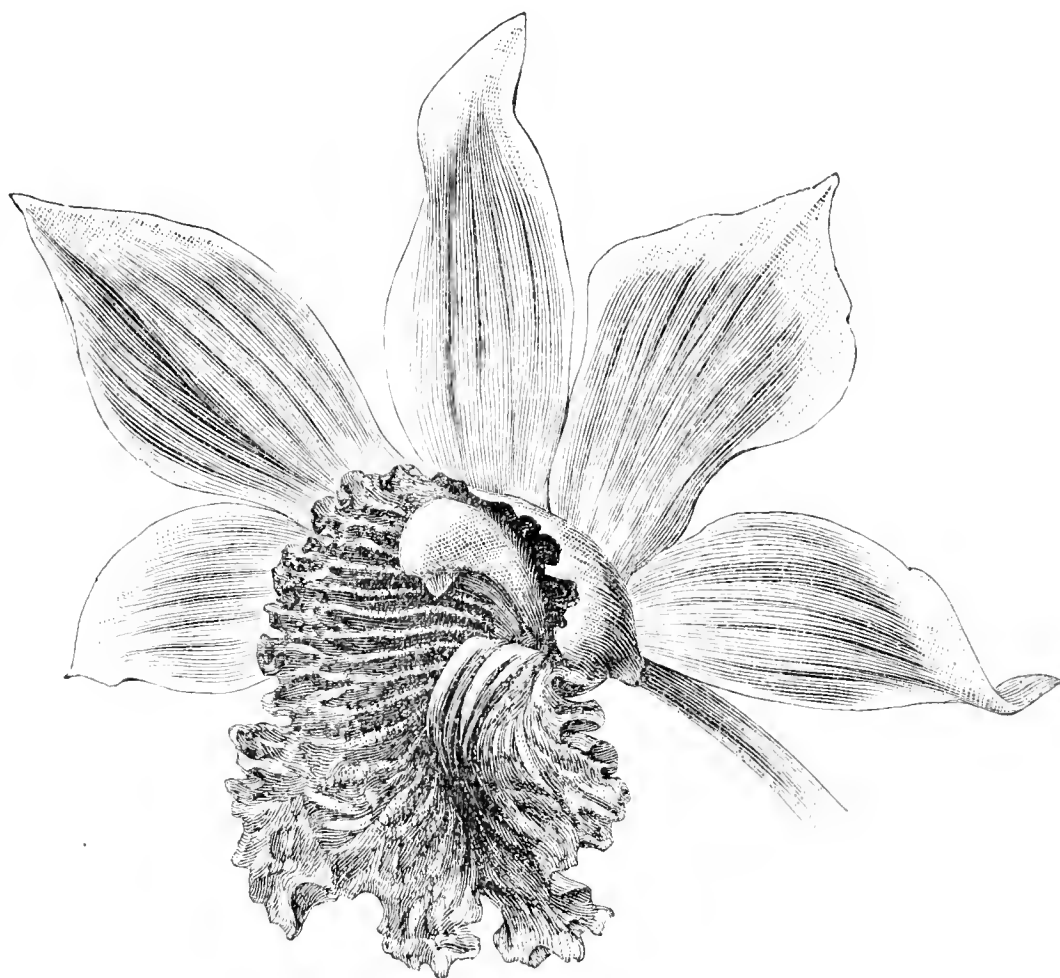


FIG. 97.—*PHLOX PHŒBE*. (See page 450.)

Messrs. J. Veitch & Sons, Chelsea, are again in evidence with a collection of well grown *Gloxinias*, both named and seedling forms. The plants are carrying clusters of bloom of the brightest colours, while the spotted varieties are excellent. Following these are a group of *Richardia Elliottiana* producing some splendid spathes of a rich golden yellow. Mr. H. B. May, Dyson Lane Nurseries, Edmonton, presents a good collection of Ferns tastefully displayed. The chief features are *Gymnogramma flavesceens*, *G. Alstonæ* *superba*, *Davallias* in variety, *Asplenium nidus*, various *Pterises*, and *Adiantums* in variety, also a good plant of the new *Zonal Pelargonium* *Decorator*, a fine bright red semi-double of considerable promise. Messrs. I. House & Sons, Bristol, have a good collection of *Violas* and *Pansies*. The flowers have suffered very much from the weather, but the following varieties are good—*Columba*, *Hamish*, *Endymion*, *Cragie*, *A. J. Rowberry*, and *White Empress*. The *Pansies* appear more at home, and include *John Myles*, Mrs. W. Steele, D. G. McKay, and Mrs. Grahame.

Messrs. J. Peed & Son, Upper Norwood, exhibit *Gloxinias* in capital style, the strain is undoubtedly a good one. The plants are bright, and carry a wealth of flowers. The spotted varieties are strong and dense, with plenty of substance. Messrs. J. Kelway & Sons, Langport, occupy a large space with some choice tree *Pæonies*, including such fine forms as *Marchioness of Salisbury*, *Orme*, *Eastern Prince*, *Julius Caesar*, and *Royal Babe*; also some good *Hippeastrums* and herbaceous plants.

A collection of *Carnations* in pots is staged by Mr. Chas. Turner, Slough, which includes *Goldy Locks*, *Lady Hermione*, *Sir Bevis*, *Rizzio*, *Athelwold*, and *Knight Templar*, while the *Malmaison* type is represented by some beautiful *Princess May* *Carnations*.

Mr. W. J. Godfrey, Exmouth, sends some Oriental Poppies in quite art shades, but the heat of the tent has totally destroyed their beauty. Mr. W. Pascoe, gardener to Captain Torrens, Hayes, Kent, staged three Moutan Pæonies. They are very fine, especially Anyoji.

Messrs. Webb & Sons, Stourbridge, contribute a display of Calceolarias and Begonias. The former are well spotted and the colours bright and distinct. The Begonias are dwarf in habit, both double and single forms being represented in a good variety of colours. Messrs. Storrie and Storrie, Dundee, stage a collection of border Auriculas; the best are Victoria, bright yellow; Souvenir de W. E. Gladstone, Hebe, Venus, and Zenobia, all of the same yellow shades; also some floral designs carried out with the same flowers. The collection of herbaceous Calceolarias placed on view by Messrs. Carter, High Holborn, is certainly one worthy of the firm. The spotted forms are excellent, as is also the variety Cloth of Gold. The plants are nicely arranged in a bed of Ferns and Isoplepis. The same firm also exhibits good strains of Mimulus, Giant Mignonette, and Petonias.

Mr. H. J. Chapman, gardener to R. I. Measures, Esq., stages an interesting collection of insectivorous plants which attracts the visitors. The *Drosera spatulata*; *Darlingtonia californica*, a good specimen; *Sarracenia Feildsi*, *S. Drummondii*, *Nepenthes Mastersii*, *Sarracenia Chelsoni*, *S. exoniensis*, *S. Willisi*, and *S. Courti* are all large typical plants. The groundwork is composed of Maidenhair Ferns and small Palms. The Anglo-Continental Guano Company has a display of miscellaneous plants.

CERTIFICATES AND AWARDS OF MERIT.

Acer pseudo-Platanus elegantissima variegata (T. Perkins).—A broad-leaved species, with a sort of tricolor growth; some of the leaves are creamy, with a tinge of red on the surface, giving it a most attractive appearance (first-class certificate).

Anemone sylvestris fl. pl. (G. Jackman & Son).—A charming flower that is perfectly double and pure white save for the green in the centre (award of merit).

Begonia Miss Barbara Ray (T. S. Ware, Ltd.).—A superb double variety of a very rich orange colour (award of merit).

Begonia Duke of Devonshire (T. S. Ware, Ltd.).—A brilliant scarlet crimson double variety, with petals of exceptional size (award of merit).

Begonia Miss Mary Poje (T. S. Ware, Ltd.).—A magnificent double white, with very large wavy margined petals (award of merit).

Begonia Miss Bella Tait (T. S. Ware, Ltd.).—One of the best double Begonias in the show. The colour is rich salmon pink (award of merit).

Cattleya Aphrodite Ruth (Lupton).—One of the handsomest Orchids in the whole exhibition. The narrow slightly recurving sepals are delicate blush, and the broader wavy petals milk white with a suspicion of pink. The beautifully fimbriated lip is brilliant maroon with a lemon yellow throat (first-class certificate).

Cattleya Mossiae gloriosa (Lupton).—A flower that combines substance and quality with size. The sepals and petals are purplish rose, the latter being of immense breadth. The lip is broad, crimson in colour, and with a rose margin. The side lobes and throat are golden yellow (award of merit).

Cattleya Eudora Madame Albert Hye (Jules Hye).—A singularly handsome variety. The fine sepals and petals are soft rose with deeper markings. The broadly expanded lip is rich velvety crimson, the throat being yellow with crimson veins (first-class certificate).

Cattleya intermedia var. Rosslyn (H. T. Pitt).—A chastely beautiful and very refined flower. The colour is ivory white, with flushes of delicate rose, particularly in the tube of the throat (award of merit).

Cattleya Mendel Burford variety (W. H. White).—Probably one of the most refined types of Mendel in the show. The sepals and petals are rose, and the front portion of the fimbriated lip crimson suffused with purple. The side lobes are yellow paling to white; the throat is yellow with crimson veins (award of merit).

Cattleya Mossiae Grosseniana (W. H. White).—A very distinct variety. The sepals and broad petals are soft blush. The lip is exceptionally dark purple crimson, with a beautifully fimbriated white margin. The throat is yellow (award of merit).

Cattleya Mossiae Beauty of Bush Hill (H. Low & Co.).—Undoubtedly one of the most striking varieties of Mossiae that has ever been staged. The sepals and petals are pale purplish rose, with veins of almost white. The lip is crimson on the centre lobe, yellow in the side lobes, and with a crimson veined throat. The margin of the lip is rose (first-class certificate).

Cattleya Mendel Perfection (H. Low & Co.).—A finely formed Mendel with petals of exceptional width. The colour of sepals and petals is rose with the slightest flush of purple. The heavily fimbriated lip is bright crimson (award of merit).

Cattleya Mossiae Mrs. Fieling (S. Mobbs & Ashton).—A richly coloured variety. The sepals and petals are intense rose, and the lip is velvety crimson, with a golden yellowish throat, and an elegantly fimbriated margin of rose (award of merit).

Dracaena cannaefolia variegata (J. Laing & Sons).—An effective plant for decoration. The leaves are deep green, with cream margins and occasional stripes (award of merit).

Heliconia Sanderi (F. Sander & Co.).—A strikingly handsome plant of which the large leaves are deep green, golden, and almost white (first-class certificate).

Ilex Wilsoni (Fisher, Son & Sibray, Ltd.).—A broad-leaved form with Laurel-like spiny leaves; evidently a robust form (first-class certificate).

Juniperus Sanderi (F. Sander).—A graceful little plant with glaucous green leafage (award of merit).

Ixia purpurata Annie Louise (G. W. Law Schofield).—This is a most handsome form. The sepals are very pale rose, and the broad slightly wavy petals are rose, with bright crimson veinings and a paler base. The superb lip is rich crimson, deepening towards the throat and side lobes (first-class certificate).

Mittonia vexillaria dulcotense (W. Cobb).—This flower is not large, but the colour of the broad shapely lip is rich pink suffused with purple. The sepals are pale rose, and the petals somewhat deeper in shade (award of merit).

Mittonia vexillaria Lindenii (L. Linden).—A lovely flower. It is large in size, and of good form. The sepals and petals are rich rose, and the broad lip soft rose, paling to white at the margins (award of merit).

Odontoglossum crispum Etoile de Congo (Jules Hye).—An effective flower, of good form. The colour is white, with flushings of rose in the sepals and petals and pale crimson blotches (award of merit).

Odontoglossum Lalli de Lairesianum (Jules Hye).—A most remarkable flower. The colour throughout the whole of the organs is pale yellowish green (award of merit).

Odontoglossum crispum Miss Linden (L. Linden).—A small but chaste variety. The prevailing colour is white, with numerous chocolate spots, and a blotch on the lip (award of merit).

Odontoglossum triumphans hybrid King Alfred (W. Stevens).—This flower has form, colour, and substance. The sepals and petals are bright yellow, tinged with green at the tips, and paling to white at the base, with immense blotches and spots of brown. The lip is serrated; pale yellow at the base, and chocolate on the front lobe (award of merit).

Odontoglossum crispum Arthur Brisco (W. Stevens).—A beautiful *Odontoglossum*. The colour of the finely formed flower is pure white with large and regular crimson-brown sepals and blotches (first-class certificate).

Pæony Cecil Rhodes (J. Kelway & Son).—A single tree Pæony of good size. The colour is red (award of merit).

Pæony Miss Beatrix Jones (J. Kelway & Son).—A white, single tree variety, of chaste beauty (award of merit).

Phalænopsis Sanderiana Wigani var. (W. H. Young).—This is a charming variety, of which the colour that prevails over the whole flower is purplish rose (award of merit).

Phyllocactus Nysa (J. Veitch & Sons).—A finely formed variety of large size. The colour is bright red (award of merit).

Phyllocactus Admiration (J. Veitch & Sons).—A smaller flowered variety than the foregoing. The colour is soft pink (award of merit).

Phyllocactus J. T. Pearock Improved (J. Veitch & Sons).—A superb variety. The colour is brilliant red with a purple suffusion in the centre petals (award of merit).

Polystichum angulare divisilobum plumosissimum (W. & J. Birkenhead).—With a name such as the above it would be entirely superfluous for us to give a description (first class certificate).

Thunia Bensoniae superba (W. H. White).—The rich dark purplish crimson flowers of this variety honestly entitle it to the name of *superba* (award of merit).

FRUITS AND VEGETABLES.

Though the last week in May is early for growers of fruits and vegetables to show produce of the highest excellence, they are ever to the fore with exhibits that for the time of year reflect the greatest credit on every one concerned in their production. On the present occasion there are, we think, rather more exhibitors in the section than is customary, and with the numerical increase we are glad to say there is no diminution in the quality. There are large stands and small ones, comprising all crops that can now be staged, and it must be a relief for the visitor to turn from the brightness of the flowers to the more modest beauty of the fruits and the vegetables.

Messrs. T. Rivers & Son, Sawbridgeworth, occupy a position in the large marquee with their unrivalled collection of pot fruit trees. Visitors have become accustomed to the Sawbridgeworth quality, and they will be more than satisfied this year. The group is not all Nectarines, but includes Peaches, Cherries, and Plums. The beautifully grown trees, with their clean wood and stout healthy leafage, contain, of Nectarines, Dryden, Stanwick Elruge, Early Rivers, and Cardinal; with Cherries, Belle d'Orleans and Early Rivers; and Peaches, Stirling Castle, Royal George, Dagmar, Hale's Early, Dr. Hogg, and Crimson Galande. We agree with the remark of a visitor that at least one of the ten commandments will be broken during this show.

The whole of the central staging in the smallest tent is occupied by Messrs. J. Carter & Co., High Holborn, with a most meritorious exhibit, comprising flowers and vegetables. The arrangement is decidedly artistic, and attracts considerable attention for this reason as well as on account of the excellent quality of the several products requisitioned. Amongst the flowers are handsome examples of Victoria Prize Calceolarias; Invincible Prize Gloxinias and Petunias are most attractive. They are from the firm's nurseries at Perry Hill. The more utilitarian portion of the stand comprises Royal Osborne Cucumber, Carter's Foreign Turnip, Duke of York Tomato, climbing French Beans, Daisy Pea, Early Favourite Potato, Model Leek, White Cos Lettuce, Foreign Cauliflower, and Early Morn Pea.

Messrs. Laxton Bros., Bedford, are represented by an exhibit of their Strawberries. There are about three and a half dozen plants in pots, every one of which is carrying a number of ripe luscious fruits, and others in varying stages of development. The varieties include Leader and Fillbasket, the latter producing an exceptionally heavy crop.

From the Horticultural College, Swanley, comes a collection of vegetables in variety, including Peas Sutton's Excelsior and American Wonder;

Cabbages Early Offenham and Cannell's Reliance, Tomato Up-to-Date, Cucumber Magnum Bonum, Potatoes Ringleader, Early Puritan, and Sharpe's Victor, Marrow Long White, Beans Negro and Canadian Wonder, Lettuces Tom Thumb and Epicure, Radish French Breakfast, Carrots Sutton's Invincible and Champion Horn, with Turnip Early Snowball, Beet Dell's Crimson, and several others. On the whole this is a creditable exhibit.

A collection of choice fruit has come from Mr. J. McIndoe, gardener to Sir Joseph Pease, Bart., Hutton Hall, Guisborough. There are three seedling and one Scarlet Premier Melon, Grosse Mignonne Peaches, and Early Rivers Nectarine, McIndoe's Russet and Carbine Apples, Downton, Black Tartarian and Bigarreau Napoleon Cherries, Imperial Lemons, Lime Exquisite, Brown Turkey Figs; Catillac Pears, and Lawrence's Favourite Tomatoes. The Grapes include Early Summer Frontignan, Black Hamburgh, and Foster's Seedling. All the varieties are in good condition.

Plants of Strawberry Lady Suffield are to be seen as grown by Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich. It is a dark coloured variety of fair flavour. Mr. B. Ashton, gardener to the Earl of Lathom, Lathom House, Ormskirk, stages three dishes of Peaches. The fruits are not large but very rich in colour.

Mr. W. Fyfe, gardener to Lord Wantage, V.C., Lockinge Park, Wantage, contributes a collection of fruit in several varieties, and the condition of the produce is extremely creditable. The Melons British Queen and Hero of Lockinge are splendid, as are the Stirling Castle Peaches and the Impératrice Nectarines. Figs Brown Turkey and White Ischia, with Tomato Dwarf Champion and Apples Fearn's Pippin and Jack, also claim attention. Besides these there are Monstera deliciosa, Citron, and Buckland Sweetwater, Madresfield Court, Foster's Seedling, and Black Hamburgh Grapes, all of good size and finish.

The largest collection of vegetables sent by an amateur grower is probably that from Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill House, Ampthill, Beds. This occupies a considerable amount of space, and must be placed amongst the most creditable stands in the whole exhibition. There are Peas Carter's Blue Express and re-selected Express in pots, with pods of Early Morn and Daisy; Beans are represented by Seville, Mammoth Longpod, Green Windsor, Climbing French, Osborne's Forcing, and Ne Plus Ultra; Tomatoes Duke of York, Market Favourite, Warden Park Favourite, and Dedham Favourite; Leeks Lyon and Model; Turnips Purple-topped Strapleaf and Early Milan; Broccoli Carter's Summer and Universal, with Sharpe's Victor and First Crop Potatoes, Asparagus, Cabbages, Lettuces, Radishes, and splendid Royal Osborne Cucumbers. Of fruit Mr. Empson sent a grand bunch of Musa Cavendishi, Strawberries Royal Sovereign and Leader, with several Melons.

Half a dozen boxes of Cucumbers, seven boxes of Tomatoes, with one and a half dozen Melons constitute Mr. S. Mortimer's exhibit from Rowledge, Farnham. It is a most interesting stand, and deserves all the attention given to it. The Cucumbers are Success, Prizewinner, The Keeper, Express, Improved Telegraph, and an unnamed seedling. The Tomatoes include The Cropper, Chemin Rouge, Perfection, Sutton's A1, Mitchell's Hybrid, and Dessert. Several of the Melons are of handsome appearance.

Fruits and vegetables in about equal quantities are found in the stand from Mr. J. Ryder, gardener to the Countess of Limerick, Hawkswick, St. Albans, and all alike are of good quality. Peaches, Strawberries, Melons represent the former, and Turnips, Carrots, Beans, Potatoes, Asparagus, Broccoli, and Tomatoes the vegetable section. The Royal Sovereign Strawberries and Grosse Mignonne Peaches are perhaps the pick of the collection. Mr. W. Robins, gardener to Col. Lee, Hartwell House, Aylesbury, shows Hale's Early Peaches in good form, with Beauty of Windsor Melons. Messrs. A. W. Young & Co., Stevenage, have a number of fruits of Tomatoes, Young's Eclipse, a shapely variety of good colour.

Messrs. A. J. Harwood, St. Peter's Street, Colchester, Frank Chapman, 57, Crouch Street, Colchester, and W. Godfrey, Colchester, send some bunches of immense Asparagus, the latter showing also a few stalks of a very big Rhubarb. Mr. R. E. Addey, Ealing Road, Brentford, shows Mushroom, spawn and Mushrooms in various stages of development. They are in fine condition. Mr. J. Crook, gardener to W. H. Evans, Esq., Forde Abbey, Chard, exhibits Foreign Bean Progress, Tomato Surprise, Potato Sharpe's Victor, with Apple Sturmer Pippin.

Mr. W. L. Bastin, gardener to A. Henderson, Esq., Buscot Park, Faringdon, sends a miscellaneous group of fruits and vegetables, including, in most creditable condition, all those now procurable by proper methods of culture. There are about a dozen and a half of Melons, with Foster's Seedling and Black Hamburgh Grapes, Early Mignonne Peaches, and Lord Napier Nectarine, and such vegetables as Broccoli, Asparagus, Cucumbers, Tomatoes, Beans, Marrows, Peas, Carrots, Lettuces, and others.

One of the most meritorious exhibits in the fruit section is that from Messrs. G. Bunyard & Co., Maidstone, who are showing Apples as few growers in this country could do at this season of the year. Scores of varieties are represented in condition almost equal to that of many growers' produce at Christmas. We cannot enumerate all, but must call particular attention to Lord Derby, Calville Rouge, Betty Geeson, Calville Malingre, Beauty of Kent, Annie Elizabeth, Alfriston, Gooseberry Apple, Allington Pippin, Belle de Pontoise, Small's Prince Arthur, Tibbett's Pearmain, Murfitt's Seedling, Bismarck, Hormead's Pearmain, Gloria Mundi, Striped Beefing, Mère de Ménage, and Hoary Morning. There are also from Maidstone a few fruit trees in pots in capital condition.

A most striking exhibit is that from Messrs. Sutton & Sons, Reading

It comprises a central pile of Tomato Sutton's Winter Beauty encircled by baskets of Green Peas. These are not empty pods, but contain peas of good size and colour. The varieties comprise Sutton's Early Giant, May Queen, Empress of India, Bountiful, Excelsior, A1 Seedling, and selected Duke of Albany. These all come within the designation of Marrowfat varieties, and will be appreciated for their earliness and excellent quality.

MEDALS AND CUPS AWARDED.

GOLD MEDALS.—Sir Trevor Lawrence, Bart., and Mons. Jules Hye, for Orchids; Messrs. J. Veitch & Sons, Ltd., for Phyllocacti, Gloxinias, Caladiums, shrubs, and foliage plants; Messrs. Fisher, Son, & Sibray, for shrubs and foliage plants; and Messrs. T. S. Ware, Ltd., for Begonias.

SILVER CUPS.—Messrs. L. Linder, W. H. Young, F. Sander & Co., Charlesworth & Co., H. Low & Co., for Orchids; Messrs. Paul & Son, G. Mount, and W. Paul & Son, for Roses; Messrs. Wills & Segar for foliage plants, and Messrs. J. Laing & Sons, Streptocarpus, Caladiums, and Begonias; Messrs. G. Bunyard & Co. for Apples and fruit trees; W. Fyfe for fruit; T. Rivers & Son for fruit; H. B. May for Ferns; Sutton & Sons for vegetables and Calceolarias; Backhouse & Co., Ltd., for miscellaneous plants; W. Stevens, J. Rutherford, and Cypher & Co., for Orchids; and C. Turner, Slough, for Roses and other plants.

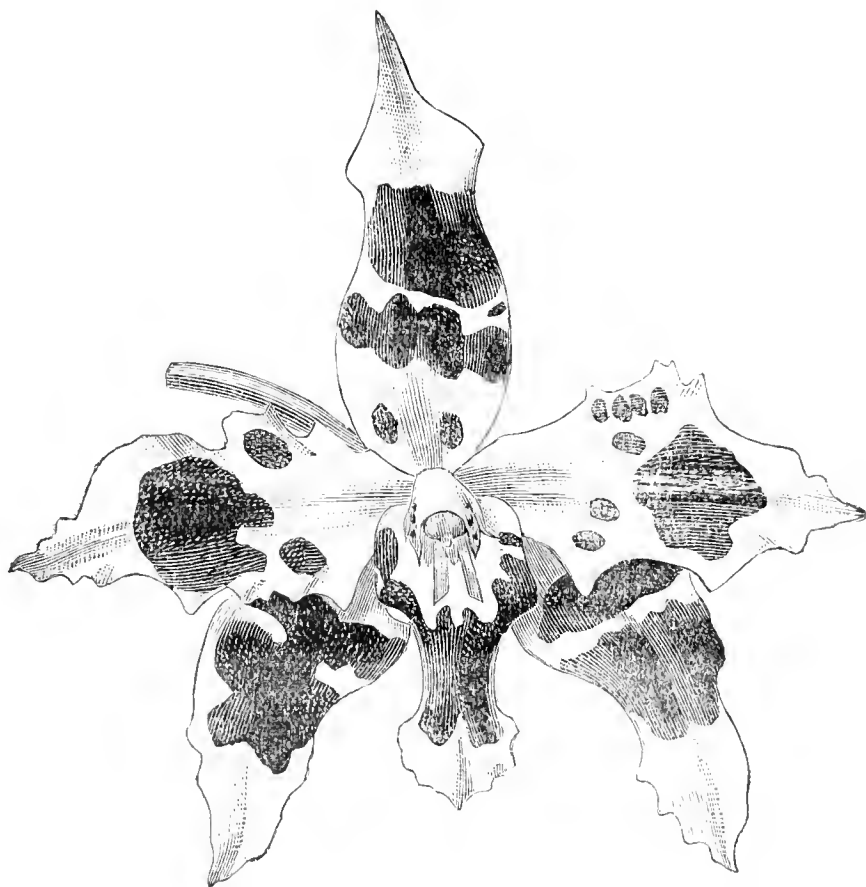


FIG. 98.—ODONTOGLOSSUM CORADINEI MIRABILE. (See page 450.)

SILVER-GILT FLORA MEDALS.—Messrs. Stanley Mobbs & Ashton for Orchids; R. & G. Cuthbert for Azaleas; C. Blick for Carnations; G. Jackman & Son and Smith & Co. for Clematis; the Guildford Hardy Plant Company for Alpines; J. Kelway & Son for Pæonies; W. Cutbush and Son for flowering shrubs; J. Hill & Son for Ferns; Fromow & Co. for Maples; R. Wallace & Co. for Lilies; J. Waterer for Rhododendrons; H. Cannell & Sons for Cannas and Begonias; G. Hunt for Caladiums; and J. Peed & Son for Caladiums and Gloxinias.

SILVER FLORA MEDALS.—Messrs. M. S. Cooke for Orchids, and J. Cripps & Son for Maples.

SILVER-GILT BANKSIAN MEDALS.—Messrs. E. Carr, G. Cragg, and B. S. Williams & Son for Orchids, A. Perry for hardy flowers, W. Bull for Dracænas, W. & J. Birkenhead for Ferns, W. Leeton for Palms, J. Russell for hardy shrubs and Azaleas, Barr & Sons for hardy plants, J. Carter & Co. for Calceolarias and vegetables, and the Swanley College for vegetables.

SILVER BANKSIAN MEDALS.—Messrs. L. Mond for Orchids; Webb and Sons for Calceolarias and Gloxinias; M. Prichard for hardy flowers; I. House & Son for Violas; T. Jannock for Lily of the Valley; Van Waveren for Spiræas; W. Poupert for Lily of the Valley; Storrie for Auriculas; T. Perkins for Sycamores; R. Hoffman for Caladiums; W. Godfrey for Asparagus and J. Ryder for vegetables.

SILVER-GILT KNIGHTIAN MEDALS.—Messrs. A. Henderson and J. McIndoe for fruit, and W. J. Empson and S. Mortimer for fruit and vegetables.

We must not bring this report to a close without offering a tribute to the several officials who have worked so strenuously to make the whole exhibition a success. They have done wonders, and the smoothness with which everything proceeded showed how thoroughly the preliminary operations had been carried out. The Rev. W. Wilks, Mr. Frank Reader, Mr. S. T. Wright, and Mr. T. Humphreys deserve the thanks of every person who enters the Temple Gardens during the continuance of the show, as do their several assistants, for good work cheerfully and courteously done.



RECENT WEATHER IN LONDON.—At last a welcome change has come and we are not being nipped by bitterly cold winds and sharp morning frosts. On Sunday it turned materially warmer, though the wind remained in the same quarter. On Monday it was quite mild as compared with the conditions of the preceding week. Tuesday was quite summer-like, and encouraging to Orchid exhibitors when preparing for the Temple Show. Wednesday was bright and fine.

— WEATHER IN THE NORTH.—A pleasant change took place on Saturday on the continuously cold and wet weather that has prevailed so long. With a change of wind to the S.W. two delightfully bright and warm days followed, although there was a distinct touch of frost on the morning of each. Monday morning scarcely so bright, still promised a fine day.—B. D., *S. Perthshire*.

— REGAL PELARGONIUM WHITE GEM.—This I noted recently, and I think it is going to be a really good thing. Those of us who have been trying to grow such kinds as *fimbriatum album*, or the pure white varieties, and perhaps given up their culture for such second-rate white as *Princess Alexandra*, will be pleased to know of a good grower with flowers absolutely pure white, and this I feel positive we shall have in *White Gem*. Little bits rooted quite late in autumn are now nice plants, bushy and strong, and flowering freely.—H. R.

— NOTTINGHAMSHIRE HORTICULTURAL SOCIETY.—On July 12th and 13th the grounds of Nottingham Arboretum will be gay with the annual Show and Garden Party of the above Association—that is if, as is hoped, the weather prove propitious. There are about fifty classes in all, of which the principal is for a 200 feet group of miscellaneous plants. The first prize, offered by Lord Henry Bentinck, M.P., is £10 and a silver cup, the remaining awards being £12, £8, and £5 respectively, with £1 for unsuccessful exhibitors. Some of the classes are open to all, while others have certain limitations placed on them. The Hon. Sec., from whom all particulars may be had, is Mr. C. J. Mee, 29, Long Row, Nottingham.

— MASSACHUSETTS HORTICULTURAL SOCIETY.—A report of the proceedings of this Society is embodied in a book of 186 pages, this dealing only with the meetings held during the first quarter of 1898. In addition to routine business with some particulars relative to prize money at shows, there are exhaustive papers on "The Business Side of Fruit Culture," by Mr. J. Hale; "Horticulture in Holland, Decoration in Public Places, Bulb Growing, Nursery Stock at Boskoop," by Mr. J. K. M. L. Farquhar; "Originating New Vegetables," by the Hon. Aaron Low; "Nuts and Nut Culture," by Mr. F. M. Bartram; "Some New Notions about Some Old Insects," by Mr. M. V. Slingerland; "Rambling Notes on Trees in Streets and Elsewhere," by Mr. W. R. Smith; "The National Flower Movement," by Mr. F. L. Sargent; "The Relation of Public Schools to Rural Life," by Mr. G. T. Powell; "The Resistance of Plants to Parasitic Fungi," by Mr. E. D. Bart; "Some Native Ferns of New England," by Mr. H. L. Clapp; and "Wild Flowers of the Canadian Rockies," by Mr. C. Van Brunt. Discussions followed the major portion of the papers, these also being printed.

— "JOHNSON'S GARDENER'S DICTIONARY."—Once again has this excellent dictionary had to be revised and enlarged for publication, and the facilities for the purchase of the complete work are on this occasion easier than ever—in fact, the conditions bring it within the reach of all. It was first published nearly fifty years ago, and that it maintains its popularity is proof that it contains valuable information. Of what value it has been to present day gardeners it is impossible to estimate, but it must have been of immense service. As it was and is valuable to many persons now, so it must be to the rising generation, not alone because of the carefully compiled lists of plants, but also by reason of the thoroughly sound cultural details that are given of the most popular fruits, plants, and vegetables. It is now being brought out in weekly parts of which thirty-three will complete the work, and the price is 3d. per part, or 3½d. post free. The main object of its publication at this price is to bring it within the reach of young gardeners, to whom it is one of the first books on gardening that we recommend. It may be procured from the publisher, *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C. It is taken for granted that the matter will be carefully revised. A few reference notes in the last edition require attention.

— BRISTOL GARDENERS' ASSOCIATION.—A large number of members attended the opening meeting of the summer session to hear a paper on Tomato Culture by Mr. C. Lock, the Chairman of the Society. Mr. W. A. Garaway presided. Mr. Lock dealt with the mode of culture for early, midseason, and late crops. He made the daring statement that though a large number of people grew Tomato plants not more than 10 per cent. succeeded in growing them as successfully as they ought to do. The essayist gave practical advice on all details of cultivation, also dealing with the diseases Tomatoes are subject to. The paper was much appreciated, and a vote of thanks was given Mr. Lock. Prizes for a brace of Cucumbers were awarded Messrs. Marshall and Frampson, and the Society's certificate of merit was awarded Mr. Shaddick for a fine specimen of *Cypripedium barbatum*.

— CRYSTAL PALACE.—The programme of the general arrangements that have been made by the directors of this pleasant resort, is exceptionally diversified and complete. Every day and almost every hour has its distinct attractions, in addition to which there are numerous special features that cannot fail to receive tangible appreciation. So far as the horticultural world is concerned, visitors have, on ordinary days, the beautiful grounds; the National Rose Society's Metropolitan Show on July 1st; the National Carnation Society's Exhibition on July 24th; the Co-operative Flower Show and Festival on August 19th; the National Dahlia Society's Show on September 1st and 2nd; and the Royal Horticultural Society's Show of British-grown Fruit on September 28th, 29th, and 30th. Several additional rules have been framed for the advantage of season ticket holders—indeed, everything seems to have been done to enhance the pleasure of a visit to Sydenham. It is stated in the programme that there have been 91,293,474 visitors from June 10th, 1854, to April 30th, 1899, or an average of upwards of two millions per annum.

— DORNDEN.—Situated on "the rocky road to Dublin," this is, for its size, one of the most charming homes of gardening on the sea-side of the Milesian metropolis. In the keep of the place, in the variety of plants to be found in it, and high-class culture displayed in them, as well as the vegetable quarters, it is to-day a speaking witness of that indefatigable zeal with which Mr. Carroll, the gardener, has wrought for the past ten years. Unfortunately, Mrs. Burrowes, its octogenarian mistress, is debarred to some extent through the winter from the pleasure it yields even at that season. A feature of Dornden is the Iris borders, bisected by a grass walk, consisting of an extensive collection of the *Germanica* section, respecting which a note may be sent later on. Fine plants of the *Powercourt* variety of *Phormium tenax* are very attractive. This is distinguished from the type by its erect habit and bolder character; it is, I am told, also hardier. In his love of hardy plants Mr. Carroll displays what would be expected of one who spent some time in the College Gardens, Dublin, and no better testimonial of his taste and energy could be given than what is exemplified in Dornden.—K.

— NOTES FROM LONG DITTON.—When the late Tulips are in glorious bloom, how delightful is it to walk through the Long Ditton grounds, for besides these rich-coloured flowers, how many other of less gorgeous, though hardly less interesting, are in flower. The great breadth of the Darwin, Dideiri species, and other late Tulips, present altogether such surprising beauty and coloration as compared with what is presented by a few flowers when set up in vases. Tulips want to be seen under a bright light out in the open. It need not necessarily be bright sunshine, although that does light up the rich reds and roses as with fire. But even under the dullest skies, they furnish colour that is as brilliant as it is beautiful. How beautiful too, in masses on the mounds and stones, are the varied *Aubrietias*. *Hendersoni*, blue; *Leichtlini*, red; *Fire King*, deep red; and others. It is not until these are seen, like cataracts of colour falling over the rockwork, that their beauties are fully realised. What a pretty lavender blue flowered plant is *Polemonium reptans*. It reaches, when in bloom, a height of 9 inches, and makes a charming mass. This associates capitally with the double white *Saxifraga granulata*. *Gentiana verna*, in clumps on a carpet of *Sedum Lydium*, is also a truly lovely plant. Its blue colour is exquisite. A rich orange yellow body of colour is furnished by the creeping *Caltha parnassifolia*, which would make a striking carpet for purple Stocks. The variegated Ground Ivy, *Nepeta hederacea variegata*, is a very striking and free-growing rock plant. One of the prettiest Buttercups is *Ranunculus graminifolius*, flowers soft yellow, single, like those of small Iceland Poppies, borne on stems 14 inches in height. How light and graceful are the feathery like seed heads of *Anemone pulsatilla*, so charming for vase decoration. Singularly brilliant are the rich yellow heads of *Euphorbia pilosa major*, 10 inches in height.—D.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
May.										
Sunday .. 21	W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday .. 22	N. E.	58.5	53.8	59.6	52.1	0.07	56.9	54.3	51.2	48.3
Tuesday .. 23	S. W.	52.9	52.2	50.2	49.7	0.03	57.6	54.5	51.4	49.5
Wed'sday 24	S. W.	59.0	54.5	63.7	41.6	0.03	55.1	54.1	51.6	33.4
Thursday 25	N. E.	56.9	52.0	61.0	49.9	0.06	55.8	54.3	51.8	45.5
Friday .. 26	N. N. E.	47.9	44.5	52.2	46.9	—	55.8	54.5	51.8	46.7
Saturday 27	N. N. E.	47.6	41.8	51.1	34.7	—	52.8	54.1	51.9	26.6
		49.3	42.7	53.1	35.9	—	51.4	53.2	51.9	28.5
MEANS ..		53.2	48.8	57.1	44.4	Total	55.1	54.1	51.7	39.9

The weather during the week has been generally dull with cold winds.

— FROSTS IN MAY.—An occasional touch of frost in May is common enough, but a succession of cold nights such as we had last week is unusual at any time in the month, and especially so towards the close. In some parts of the midland counties the thermometer on the three nights ending Friday 26th fell below the freezing point, not only in the open, but also in the shelter of the screen. On the surface of the grass the frost was more general, and was in many places sufficiently sharp to cause a large amount of damage to the crops. Even at Greenwich the exposed thermometer fell to the freezing point on Thursday night, and 3° below it on Friday. At Oxford there were 2° of frost on Thursday night, and 4° on the nights both of Friday and Saturday. Further in the interior the frost was still keener, the exposed thermometer at Loughborough in Leicestershire falling 7° below the freezing point on Thursday night, 8° below it on Friday, and 6° below it on Saturday. The ground frosts came with an anti-cyclone, which drifted over the country from the north-westward, and which was attended by fine, clear nights, leading to brisk terrestrial radiation. In the daytime the sky unfortunately clouded over, and as the wind blew from the north-eastward the weather was extremely cold and harsh. On Thursday and Friday the thermometer over the eastern and central parts of England rose very little above 50°, and was at least 16° below the average for the time of year. Saturday brought in a little more sunshine, with day temperatures of 55°, or a trifle above. On Sunday night, 28th, there were 6° below freezing. We have observed that much injury has been done to Potatoes and Strawberries in some districts.

— Disastrous frosts occurred in Bedfordshire on Friday, Saturday, and Sunday, May 26th, 27th, and 28th. These varied in different situations, and at the lower elevations from 3° to 7° (*i.e.*, the readings were 29° to 25° Fahr.). During the week preceding the 26th we had about 1½ inch of rain, the soil was consequently saturated and the trees and plants filled with moisture. The result is that much damage has been caused to fruit and vegetable crops, Apples being in full blossom, and many of the early Strawberries also have their flowers expanded, while early Potatoes have been cut down in all directions except on the highest land. I hear of Tomatoes that have been put out in early districts, Runner Beans, and many ornamental garden plants that are seriously injured.—R. L. CASTLE.

— GLASS STRUCTURES AT DALKEITH.—That Mr. Dunn's successor in this great charge will have plenty to do will be evident from the following measurements, which were supplied to us by the deceased chief some years ago. It is only men of the best intelligence who can control and put to profitable use such an immense extent of glass. Camellia house, 60 feet by 25 feet; Orchid house, 55 feet by 25 feet; stove, 30 feet by 23 feet; greenhouse, 150 feet by 12 feet; intermediate house, 150 feet by 12 feet; Muscat vinery, 80 feet by 18 feet; early vinery, 60 feet by 11 feet; late vinery, 100 feet by 12 feet; three ranges of pits, each 150 feet long, utilised for Pines, Cucumbers, and Melons; Fig house, 80 feet by 14 feet; early Muscat house, 80 feet by 14 feet; forcing house, 370 feet long, divided into nine compartments of varying lengths and widths; range, 450 feet by 9 feet, in which were Apricots, Figs, Pears, Plums, Cherries, and Chrysanthemums; fruiting Pine stoves, 200 feet by 12 feet, in three divisions. Of the Heath house, fernery, and the celebrated conservatory with its ornately carved stonework, the dimensions were not given.



ROSE SHOW FIXTURES IN 1899.

- JUNE 13th (Tuesday).—Cambridge.
 „ 14th (Wednesday).—York†.
 „ 21st (Wednesday).—Isle of Wight (Shanklin).
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (R.H.S.).
 „ 28th (Wednesday).—Bath, Croydon, Maidstone, Reading, Richmond, and Ryde.
 „ 29th (Thursday).—Canterbury, Eltham, Norwich, and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Brockham, Ealing, Hanley*, Hitchin, Reigate (Redhill), and Tunbridge Wells.
 „ 6th (Thursday).—Colchester (N.R.S.) and Farningham.
 „ 7th (Friday).—Hereford.
 „ 8th (Saturday).—Manchester.
 „ 11th (Tuesday).—Wolverhampton.†
 „ 13th (Thursday).—Bedale, Brentwood, Helensburgh, and Woodbridge.
 „ 14th (Friday).—Ulverston.
 „ 15th (Saturday).—New Brighton.
 „ 20th (Thursday).—Salterhebble and Sidecup.
 „ 22nd (Saturday).—Newton Mearns.
 „ 25th (Tuesday).—Tibshelf.

* Show lasting two days. † Shows lasting three days.

The above are all the dates definitely decided upon that have as yet reached me. I shall be glad to receive the fixtures of any Rose shows not named above, or those of any horticultural exhibitions where Roses are made a leading feature, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

THE DRILL HALL ROSE SHOW.

IN a recent issue we called attention to the two shows of the National Rose Society at the Crystal Palace and at Colchester, and referred to this Society's collaboration with the Royal Horticultural Society at the Drill Hall on Tuesday, June 27th. The schedule of this show is now to hand, and it comprises fifteen classes. These are divided into seven for mixed varieties, six for Teas and Noisettes, with two for garden Roses. The two principal classes in the first section are for twenty-four distinct single trusses open to all, and eighteen distinct confined to amateurs, the prizes in each case being £3, £2, and £1. For Teas and Noisettes there is an amateurs' class for eighteen single trusses in not less than twelve varieties, with two prizes of the respective values of £3 and £1 10s., and an open class for eighteen distinct single trusses with £2 10s. and £1 10s. We observe that the National Rose Society contributes £15 10s. towards the total prize money, and it will be regrettable if there is not a thoroughly good display.

PAULOWNIA IMPERIALIS.

IN the south-west counties and other favoured localities where little frost is experienced, fine specimens of this noble Japanese tree are occasionally met with, and where such are to be found few objects are more beautiful during the flowering period. When grown naturally it forms a bushy headed tree, sometimes 40 feet high, but more frequently not more than half that height. The leaves on mature plants are about 9 inches across, soft in texture and hairy. The flowers are produced in May; they are borne in upright panicles, and resemble in shape those of a Tecoma; they are 2½ inches long, the calyx brown and felty, the corolla mauve with a whitish throat, and fragrant. Almost any soil is suitable for it, provided it is not too rich, as in that case growth is too vigorous and the shoots do not become properly ripened.

Although it is seldom flowered except in the places mentioned, it may be grown further north with success as an ornamental foliage plant. When cultivated for this purpose, a number of plants should be grouped and cut down to within a few eyes of the ground each spring. When growth commences, the strongest shoot only on each plant should be allowed to grow; this, during the summer, will attain a height of 8 or 10 feet, and will carry leaves from 1½ to 2 feet across. When grown in this manner rich soil should be given, as all the soft growth killed during winter must be cut away in spring. Several large groups are grown in this manner at Kew, and make an agreeable change among other shrubs, the large handsome foliage having quite a tropical appearance. Grown in pots, cut down annually, and fed heavily, useful ornamental plants can be had for decorative purposes during late summer and autumn.—W. D.



PHAIUS PHOEBE.

This is one of the handsomest hybrid Phaius that has yet been exhibited, and it was immensely admired at the Drill Hall on May 16th, when it was shown by Mr. W. Murray, gardener to Norman C. Cookson, Esq., Wylam-on-Tyne, and received a first-class certificate. As may be seen in the illustration (fig. 97, page 445), the flower is superb, and merits the encomiums showered upon it. It is a hybrid that resulted from a cross between Phaius Sanderianus and P. Humbloti. The sepals and petals are a curious shade of cinnamon yellow with rose shading to white at the margins. The magnificent spreading lip is rose with deeper veins and a fringed margin. The throat is bright yellow and crimson, these hues extending to the side lobes. In form it somewhat resembles P. Cooksoniae, which, it will be remembered was shown before the Royal Horticultural Society in 1895, and was figured in the *Journal of Horticulture* for June 13th, 1895, page 513.

ODONTOGLOSSUM CORADINEI MIRABILE.

It is probable that this Orchid secured as much attention as any in the Drill Hall on the 16th ult., as it was of such exceptional quality. It is probable that a finer form of Coradinei has never been shown, and the first class certificate recommended by the Orchid Committee was thoroughly deserved. The flower is singularly beautiful and of exceptional substance. The broad, slightly-fringed, petals have a large central blotch of light chocolate, with one or two spots of similar colour on the glistening white ground. In the lip and sepals the chocolate colouration extends over almost the whole surface. The woodcut (fig. 98, page 447) represents the natural size of one of the flowers on the spike. The plant came from Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, and is worthy the best traditions of that famous collection.

ORCHID SALE AT TYNTESFIELD.

The duplicate plants in Mr. F. Hardy's splendid collection at Tyntesfield were recently put up for auction by Messrs. Protheroe and Morris, and, needless to say, attracted a large number of enthusiastic Orchid growers. There were upwards of 700 lots for disposal, and two days were allotted to the sale. Amongst the principal buyers were Messrs. J. Veitch & Sons, Ltd., H. Low & Co., F. Sander & Co., Tracey, and A. Outram. Some of the plants for which the collection is renowned fetched good prices, such as *Sobralia Keinastiana*, 9 guineas; *Cattleya Bowringiana*, 15 guineas; *Cypripedium Fred Hardy*, 50 guineas; *Laelia purpurata Hardyana*, 18 guineas; *Laelio-Cattleya Arnoldiana superba*, 12 guineas; *Laelia anceps Amesæ*, 14 guineas; *Cypripedium insigne Sanderæ*, 30 guineas; *Cypripedium James H. Veitch*, 50 guineas and 80 guineas; *Laelio-Cattleya eximia*, 16 guineas; *Laelio-Cattleya Pallas superba*, 40 guineas; *Cattleya Mendeli*, Quorn House variety, 45 guineas; *Cattleya Mossiæ Wagneri*, 20 guineas; *Laelio-Cattleya Belia*, 44 guineas; with *Cypripedium callosum Sanderæ* (fig. 99) at the top of the tree, with 130 guineas. There were many others with proportionate prices, but these will be sufficient indication of the rates that prevailed.

LELIOPSIS DOMINGENSIS.

This species is not at all well known, but if sufficient plants of it were forthcoming, it would probably be grown to fill the blank after the *Laelia anceps* varieties are over. In habit it is very like some of the Mexican *Lælias*, and is nearly related to them botanically. The flowers occur on slender scapes a foot or so in length, and are, for the most part, a pretty rosy mauve or purple. It likes rather more heat than the plants named above, thriving best in well-drained baskets or pans in the lightest and warmest part of the *Cattleya* house. During the growing season abundant moisture is needed, but much less when at rest.

LELIA MAJALIS.

This is a most beautiful plant when well grown and flowered, but it is the exception rather than the rule to see really good plants of it. Some growers complain that while the plants grow freely enough no flowers are produced, but this is the fault of the cultivator, as if properly treated no difficulty will be found to get it to flower annually. In my own case the difficulty is that it flowers so strongly that the bulbs get smaller every season after a few years, and eventually the plant flowers itself to death.

After the new pseudo-bulbs are complete soon after midsummer the plant must be taken to the open air for a couple of months to

thoroughly consolidate and ripen them, and no trouble will then be found in getting plenty of flowers. All through the growing season keep the plants well up to the light in the *Cattleya* or the Mexican house, and allow plenty of water when new roots are being produced. Every young lead will then have its flower spike, and as the blossoms in a good form are nearly 6 inches across, bright rosy mauve, the effect on a dwarf plant like this is very fine. Occasionally twin-flowered spikes occur, but they are the exception. *L. majalis* is a native of Mexico, and though one of the first Orchids known to science, was not introduced to this country till 1839.

ONCIDIUM BRUNLEESIANUM.

There is no doubt this pretty species is extremely rare in its native country, for in such a well hunted locality as that around Rio de Janeiro it could not long escape collectors, yet only few plants of it have been sent home since 1879, when the gentleman after whom it

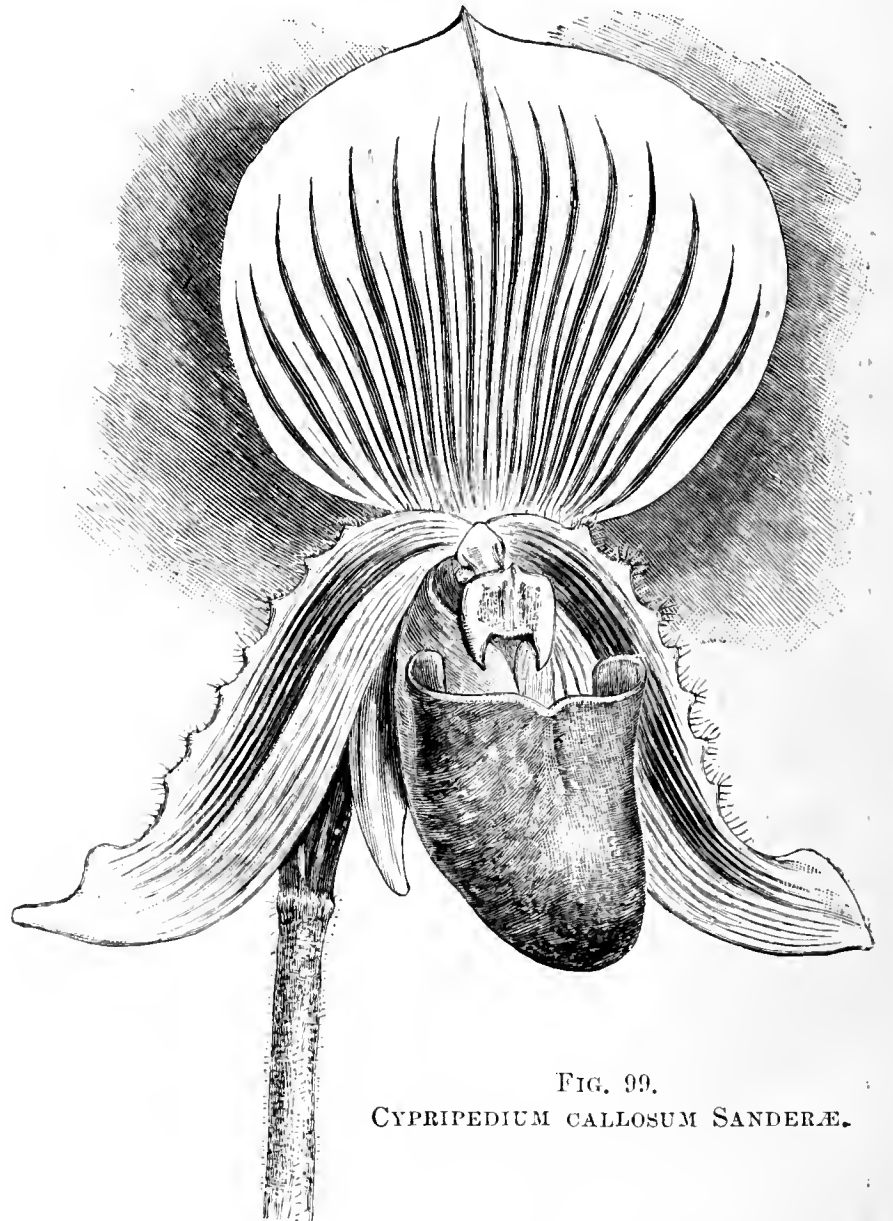


FIG. 99.
CYPRIPEDIUM CALLOSUM SANDERÆ.

is named, Mr. J. Brunlee, of Westminster, sent a piece of it to Professor Reichenbach for identification. It is a curious and handsome plant, and very seldom seen in good condition; indeed, it is not often seen at all.

The flowers are small individually, and occur upon branching panicle racemes. The sepals and petals bend forward almost hood-like over the lip, the side lobes of which in their turn envelop the column, and the front lobe is bright rich maroon, quite an out-of-the-common disposition of colour in this genus. The outer segments are lightly marked with transverse bars of red. There are often dull reddish markings upon the flower peduncles, and the branchlets occur in a distichous manner. It is described rather in detail, as some of our readers may possess a plant of it, in which case we should be glad to see flowers. Weak plants would not, of course, produce large spikes.

ONCIDIUM UNGUICULATUM.

As a showy kind this cannot compete with the nearly allied *O. uigrinum*, but it is a pretty and interesting plant none the less. Instead of the lip being spreading quite from the base, as in the latter, this organ has a long curved claw which gives the flowers a lighter, though less substantial, appearance. It is one of the best growers, and thrives well in rather small pans or pots; if suspended from the roof all the better. A native of Mexico, the plants will thrive in a cool house, and should be well watered when in active growth.—H. R. R.

RICHARDIA (CALLA) ELLIOTTIANA AND C. PENTLANDI.

C. ELLIOTTIANA was exhibited the first time at the Royal Horticultural Society's meeting held on May 13th, 1890, by Captain Elliott of Farnborough, Hants, when it received a first-class certificate from the Floral Committee. It caused quite a sensation by its beautiful golden yellow spathes. It is a greenhouse herbaceous perennial from South Africa, requiring a winter temperature of about 40° to 50°, but it must be allowed to rest during the autumn and winter months by keeping the soil almost dry.

The footstalk of the leaves is from 15 to 20 inches long, more or less mottled with white. The spathe, which is of a very rich and pure yellow, is rolled into a broad trumpet-like tube 4 to 5 inches in diameter at the mouth. Strong tubers only will produce this sized spathes. The spadix is almost concealed within the tube, and is a shade deeper in colour than the spathe.

In February the tubers will commence to show signs of growth, and as they begin to grow potting should start. Shake off all the old soil, and put them in small pots according to the size of tubers, then place them into a warmer temperature of about 55° to 60°, so as to give them a good start. They will root freely, and as the pots become full of roots transfer to larger sizes. A good four-year-old tuber will require a 7 to 8-inch pot before the spathe begins to show. Give plenty of light, and place them near the glass, but shade from the strong rays of the sun. The soil to use in potting should be a mixture of rich fibrous loam, with one-third leaf mould and silver sand or peat added. The pots must be well drained, and some good rough soil put over the crocks.

As a rule the spathe will show itself when the plant is developing its second or third leaf; at first it is quite green, and as it continues growing so it will begin to show signs of colour. In about a fortnight it becomes a beautiful golden yellow, which colour is retained from twelve to fourteen days, when it gradually turns green again, and if impregnated with its own pollen will produce a good crop of seed, which should be sown two to three weeks after being gathered. The freely produced seeds ought to flower in from two to three years. The spathes are never so large on young plants as from tubers from four to five years old. The stock can also be increased by suckers and divisions, which should be done just as they begin to make their fresh roots in spring.

The yellow Arums do not require so much water as *C. aethiopica* or *africana*, neither do they grow so strongly, and consequently require a little more attention, and a warmer temperature when growing. *C. aethiopica* will do well out of doors during the summer months, and grow luxuriantly, for which purpose the yellow kinds have been tried, but with only partial success. They have done fairly well in

a few places, but unless the tubers are strong, and planted or plunged in a very warm border, they will not come to that perfection as under the treatment above suggested.

C. Pentlandi was exhibited by R. White, Esq., of Pentland House, Lee, before the Floral Committee of the Royal Horticultural Society on June 21st, 1892. It requires precisely the same treatment as the preceding. The colour of the spathes is very much the same in both

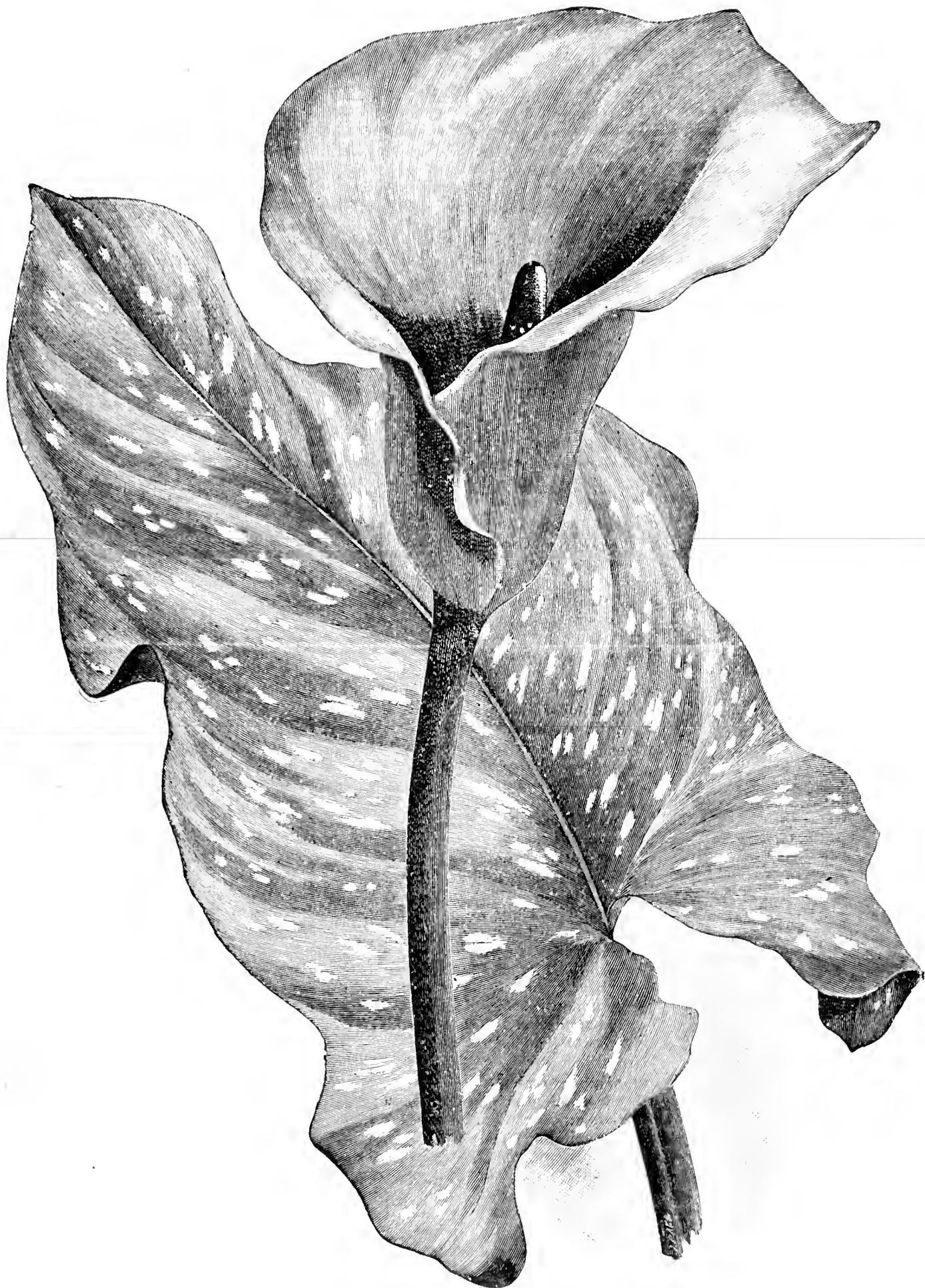


FIG. 100.—RICHARDIA (CALLA) ELLIOTTIANA.

species, although on some plants it varies, some being a trifle deeper in shade than others. The principal distinction between the two is that the foliage of *C. Pentlandi* is wholly green, and has a broad black band at the base of the spathe. Both species require an intermediate house, and a period of rest during the autumn and winter.

The foregoing description shows how distinct both are from *C. aethiopica* in cultivation and colour. They are a splendid addition to the genus, and most valuable acquisitions to the conservatory and

the greenhouse. No garden, however small, should be without them.
—H. W. G.

[We trust the practical information given by our correspondent will be of service to "D., Deal" (who recently sought for cultural hints) and other readers. For the excellent illustration (fig. 100) of *R. Ellottiana* we are indebted to the courtesy of Messrs. J. Veitch and Sons, Ltd, Chelsea, who showed such a splendid group of those plants at the Drill Hall on May 16th, and at the Temple Show.]

BLOSSOM BUD FORMATION.

As a pendant to the instructive discussion on "pinching fruit trees," we propounded, on page 393, May 11th, the following questions as bearing on the subject, and invited replies from our correspondents. Of those received we publish an instalment, and have others not less interesting to follow.

- 1, What is a blossom bud?
- 2, How is it formed?
- 2, What helps and what hinders its production?
- 4, If, and in what way, a blossom bud can be changed into a growth bud?

Great pressure of work has prevented me from replying earlier to the above questions (page 393), which should supply most of us with food for reflection.

My answer to question 1 is, An arrested growth bud, which contains in the embryo the essential organs of reproduction.

2, The marvellous process by which wood buds are converted into blossom buds is beyond the power of plant physiologists to show us; they can only demonstrate that under certain conditions such changes do take place.

3, This ought to elicit the most useful information, as the observation of all practical cultivators should lead them to form decided opinion on the points raised. Assuming that my definition of "a blossom bud" is correct, it becomes apparent that growth has to be checked—arrested—to secure blossom buds. Under some circumstances this is in favourable seasons brought about by natural conditions, as the moist, mild weather of spring is favourable to growth. Then follow the sunshine and great heat of summer, which checks growth, and solidifies it, a process which we term wood ripening, and which we know causes blossom bud formation. When, however, we have wet comparatively sunless summers, growth continues for a longer time, not being checked by sunshine and a dry atmosphere, the wood then fails to ripen properly, and the effect is seen in a scanty show of blossom the following season, or at least a dearth of vigorous fully developed ones. One of the greatest aids to blossom bud formation is then clearly to keep the shoots thinly disposed, so that whatever the weather may be every leaf and shoot may be fully exposed, and thus become hardened—checked—in due proportion to the amount of sunshine we get. By pinching a shoot in summer we check it for a time, but also cause it to start into growth again, and during the time active growth is taking place the process of sap elaboration and blossom bud formation is to a certain extent delayed, for the natural conditions under which fruitful wood is produced are completed—growth first, then wood ripening. In the case of trees trained on the restrictive system pinching is no doubt necessary to prevent the shoots becoming crowded to the exclusion of sun and air, but this only shows that Nature will do the whole thing for us if we allow trees plenty of room, and thin the branches thoroughly. Other aids to blossom bud formation are root-pruning and shortening but little at the winter pruning, as hard pruning results in a thicket of strong shoots unless root-pruning is practised in conjunction with it. Blossom bud formation is also aided by budding on dwarfing stocks, and in the case of trees worked on the Crab, planting very firmly in soil not over-rich.

4, A fully developed blossom bud cannot be changed into a growth bud, but during the transitory state absence of sunshine, combined with a vigorous flow of sap, may prevent the formation of a perfect flower bud. Something else may also happen which many might take to be the changing of a flower bud to a wood bud. Examine an Apple branch in early spring; at the base of a blossom bud may often be seen a small wood bud, which seems to form part of the blossom bud; this bud may drop, or not burst, and leave the tiny wood bud, but no change has taken place in it, it was a separate bud from the first.—H. DUNKIN.

1, THIS question is not so readily answered as may appear. Different plants have different ways of producing blossom buds. A blossom bud of an Apple or Pear tree is specialised growth, containing the essential organs of reproduction, as well as a non-essential envelope which serves as a source of attraction to insects to visit the flower for the purpose of fertilisation. A blossom bud would be really useless if

it did not contain the organs of reproduction, because the functions that they perform are absolutely necessary in order that fruit and seed may be produced for the perpetuation of its kind. In short, then, a blossom bud is a bud specially developed by a plant or tree for the main object of producing seed. The cultivator's object, unlike that of the plant or tree is to produce in a highly developed form the fleshy, succulent, and protective covering in which the seed is enclosed.

2, A blossom bud is formed by the elaboration, in a highly perfected condition, of the materials taken in by the plants in the shape of soluble food absorbed by the roots from the soil and gaseous food taken in by the leaves from the air. These substances undergo chemical change in the leaves, whence they are transferred to various parts of the plant for the enlargement of the whole. The reserve material is then stored up in buds for future growth, and under the most favourable conditions, a certain amount having become more highly perfected, is built up only into blossom buds.

3, The production of a blossom bud is helped chiefly by the full exposure of shoots to sun and air, so that the work of the leaves may be carried out under the best conditions. It is also important that a due supply of nourishment may be obtained by the roots. Under less favourable conditions blossom buds form, owing to a limited supply of nourishment; but if they develop into perfect blossom buds, it is done at the expense of growth buds. A weakly blossom bud will not fully perfect the essential organs. A blossom bud is hindered in forming when the roots are more than usually active in rich soil, which provides a stimulus to continued and vigorous growth; also when the roots of fruit trees descend deeply into the subsoil, stimulating strong and sappy growth.

4, A fully formed blossom bud cannot be changed into a growth bud, because a blossom bud contains only the essential and non-essential organs of the flower. If it fail to fulfil its functions it simply dies, as it contains no provision within itself to form new wood growth.—E. D. S.

NOTES ON FORCED FIGS.

IN order to have early Figs the trees must be of varieties that afford good results in their first crops, such as St. John's, Angélique, Black Provence, Early Violet, and White Ischia, all with small fruit; Black Ischia, Brown Ischia, both with medium sized fruit; Pingo de Mel and Brown Turkey, with large fruit and best for general purposes. The trees must not be neglected or disappointment is inevitable. They should have all the light possible and be kept as near the glass as practicable without touching, so as to secure sturdy well ripened growths, and pinching must not be practised to a late period, otherwise the shoots will not mature sufficiently to carry a first crop of fruit. The foliage should be kept clean, and liquid manure supplied so as to secure stout but not gross growth.

When the growth is complete the trees may be stood outdoors to induce rest, but the wood should be well matured previously, and to be of use for early forcing it must be matured early. The trees should be given a sunny corner, but not dried off, properly syringing and watering, and if the wood be soft the trees should be kept under glass until it is thoroughly ripened.

The second crop now swelling on the current year's wood should be thinned before the fruit is the size of Walnuts, and in thinning reserve the largest fruits at the base of the shoots. The trees require generous treatment; those in pots must be mulched with rich material and supplied with liquid nourishment twice a day in hot weather, and generally once. Trees in borders also require mulching and water or liquid manure once or twice a week, according to the extent of the rooting area; others may require it less frequently on account of their vigour, always being guided by circumstances and actual requirements. Syringing will be needed twice a day to keep red spider in check, and, if necessary, apply an insecticide, removing scale with a brush.

The fruit now ripening in succession houses must be kept from damp throughout the whole of the process, affording a free circulation of warm, dry air, and a night temperature of 60° to 65°, 70° to 75° by day, and with sun heat, 80° to 90°. Figs ripened in a close moist atmosphere and in shade are insipid, but those perfected in full exposure to light and a favourable atmosphere are wholesome and nutritious. If a circulation of air be afforded constantly there will be little danger of "spot," but if it should appear promptly remove the affected fruit and burn it, also, as a safeguard, use a little sulphur on the hot-water pipes. This is also hateful to red spider, the fumes given off having a deterrent effect. In bad cases it is advisable to gather the fruit closely and give a good syringing, which is still the best means of keeping down red spider, and the water will not injure the fruit, provided it is clear and soft and the operation done early on a fine day. Although a somewhat dry atmosphere is desirable when the fruit is ripening, it must not be arid, or the foliage will suffer, and moderate moisture will not damage the fruit, provided a circulation of air is maintained and the ripening Figs are not wetted.

Trees swelling their crops will require syringing twice a day, copious supplies of water or liquid manure at the roots, and a genial atmosphere. Afford the fruit the benefit of all the light practicable, tying in and regulating the shoots by thinning and stopping.—GROWER.



INCURVED AND REFLEXED JAPANESE CHRYSANTHEMUMS.

I DO not at all share in Mr. Molyneux's fear (page 402) that the classes for twelve incurved Japanese and twelve reflexed Japanese, which are in the present year's schedule of the Kingston Chrysanthemum Society, will be failures. So far as the incurved one is concerned it has for several years been a popular class at Guildford, no difficulty being found in filling it. But for one incurved Jap there are several of expanded, or reflexed character, and to fill the class for twelve reflexed flowers would be very easy. Why, the Carnots and V. Morels alone can half fill the boxes.

As to incurved, how many fine flowers there are practically in true form incurved, some really more so than are the stiff petalled ones that are labelled as ordinary incurved by the N.C.S., to make up a good class with. Every grower knows them, and no doubt there are many who, not caring for the ordinary incurved, even though now largely composed of semi-Japanese, will be pleased to enter into a class that admits N.C.S. Jubilee, Robert Owen, Australie, and many others too numerous to mention.

As to determining whether a variety is when shown an incurved or a reflexed, I take it for granted the judges will be sufficiently intelligent to determine that on the merits of the flowers before them. If Mr. Molyneux's fine namesake throws a good incurved flower, let it be shown as such. If it throws a fully expanded, or reflexed flower, let it be so staged. Judges really have to deal with flowers, and so long as the dozen in the boxes are distinct, I do not see, provided the blooms are what are asked for, that any trouble in making the awards need arise.—A. D.

THE FINAL POTTING.

THIS, the most important of the many necessary operations in the culture of Chrysanthemums, is not always carried out just at the right time or in the best manner. Endeavour, however, should be made to place the plants in their flowering pots as soon after the pots begin to be filled with roots as possible. It is to the advantage both of the cultivator and the plants, which certainly appreciate the extended root room, showing it by increased vigour of growth and larger, more ruggedly healthful leaves.

There are more causes than mere neglect which prevent Chrysanthemums being potted immediately they are ready, and every cultivator does not always find it convenient to carry out the work at the proper time. The next best thing must then be done, and that is give increased attention to the plants while they remain in the small pots, affording additional sustenance for maintaining their vigour. The best way to do this is to afford supplies of weak liquid manure, or slight dressings of some approved fertiliser. This cannot, however, be carried on for long, and will render the final potting more than ever imperative.

During the time plants are growing or waiting for the final potting the compost for them may be prepared, though the longer period beforehand this is done the better, so that all the materials used may be well incorporated.

Those who have still to prepare their compost may do so in the following manner. Half-decayed turf should be chopped up into pieces the size of Walnuts, when in a moist state. To four parts of the turfy material add one part of decomposed manure; either cow or horse manure will suffice. Very heavy or retentive soil may have one part leaf soil added, but to light soil it is better omitted. Half a part of sand, charcoal, and wood ashes, and a similar quantity of bone meal might be mixed in. Turn the whole over several times, and to every bushel add a pound of Clay's, Standen's, or Thomson's manure. These are good general fertilisers, and either will prove beneficial. Turn the material as often as possible before potting.

Clean pots ought to be prepared and the sizes apportioned to the plants. From 7-inch to 10-inch are the best sizes, and these will accommodate plants growing in 4-inch to 6-inch pots. Crock the pots carefully, not using more than absolutely is necessary, and cover with rough parts of the compost. Take special care that the plants are moist at the roots before placing them in their flowering pots, but they must not be very wet. Where very much root-bound loosen some of the roots round the ball and pot firmly. In nearly every case the soil must be worked down very firmly by ramming, but judgment must be used in doing this, as it is possible in using some soils to make the compost too firm.

Place a long stick to each plant as the potting proceeds, and stand the plants close together on a moist base of ashes. Water carefully, and syringe every day.—S., Carshalton.

ABOUT RHUBARB.

HAVING been now for nearly thirty years experimenting with Rhubarbs, and having in that time had through my hands the bulk of the known varieties, I could but admire the soundness of the advice given to a correspondent on page 478 as to the two varieties you recommend your correspondent to grow—namely, Hawkes' Champagne for early work, and Victoria for the main market crop. "W. B." will not go far wrong if he has these two varieties.

In Rhubarb growing as in all other garden crops, the grower has first and foremost to ask himself the question, "What do I want? What are my requirements as to either market supply, or to satisfy the demands of the household that I cater for?" The settlement of that question can only be made by the grower himself. He can, and wisely does, get the opinions of those capable of instructing him by asking some such question as the one referred to, but when he has got that, it is manifestly expedient that he not only gets the varieties recommended him, and then afterwards to go on to secure as best he can other known varieties in order that he may prove for himself whether any of these will give him in a higher degree the qualities he requires in his Rhubarb or other garden crops.

I was driven to my experiments in Rhubarbs by three things. I wanted the earliest, the reddest coloured, and the sweetest flavoured Rhubarb I could get. Maincrop and forcing Rhubarb did not enter my experiment, except incidentally, and that I had at the time of my first experiment in Victoria which I now use only for jam making, or for vinegar or wine, and forcing. For forcing there is no Rhubarb to equal it. I therefore keep it chiefly for this purpose, and grow it largely on a three-years course of cultivation; that is, I make a plantation every year, taking up each third-year plantation to put into the Mushroom house in relays of roots for the winter's supply. The result of my requirements on my experiments have caused me to reduce my stock to a few varieties which so far satisfy my demands. Chiswick Early Red, the very earliest, Hawkes' Champagne, and Lister's Cherry Red as the main summer supply. Hawkes' in greatest quantity, though I cannot part with Cherry Red, because, if a little later than Hawkes', of its colour and most refined flavour. Then there are a few roots of Salt's Crimson Perfection by request of one of my principals, for its high colour, and, as I said, Victoria for late domestic use and forcing.

As, however, I have not entirely lost my Rhubarb enthusiasms, I have this season entered upon another trial, or experiment, of varieties, which I shall report on, if all is well with me, in due time, but not till after a second year's growth. I have made my experimental plantation of old and new (to me) varieties on one border, planting the varieties in lines, side by side, in the following manner:—

- 1, Lister's Cherry Red;
- 2, Baldry's Scarlet Defiance (from our friend "N. N.");
- 3, Hawkes' Champagne;
- 4, Chiswick Early Red;
- 5, Seedling from Stuart & Mein's Kelso;
- 6, The Sutton (direct from Reading); and
- 7, Kelway's Crimson Queen.

I shall watch the growth and characteristics of these all through the season, and make notes for future guidance and judgment.

"A. D.," page 385, puts in a plea, in his note on Rhubarb, for the more general raising of plants from seed, "less dependance being placed on divided plants and old stocks." Personally I have not done any raising of Rhubarb from seed, but it was my privilege some few years ago to have a friend a market gardener and nurseryman, who for a succession of years raised his forcing stock from seed, lifting them, after the second and third year's growth, according to their strength and fitness, for forcing. I had the pleasure of inspecting the crop year by year, examining each line of roots carefully to see if I could find one that was worthy of preservation as a standard variety, but in all those years I am compelled to say that I did not find one with qualities superior to known varieties. There was running through each year's crop a monotonous level of what I may call decent mediocrity. As a rule they ran on the lines of the old varieties Linnæus and Victoria. Here and there there would be a few roots or stools which showed some little variation, but none of conspicuous excellence, and as my standard was high, and my three points of earliness, colour, and flavour not satisfied, I left them to their fate—to be lifted for forcing, and then cast aside.

"A. D." seems to think that only at Chiswick is there a good collection of Rhubarbs. I do not dispute this absolutely, because he travels about more than I do, and sees more gardens in one year than I do in ten; but there are a few gardeners up and down the country who take a great interest in this fruity esculent. The late Mr. Richard Gilbert, of Burghley, was one. It was from him I had my true strain of Hawkes' Champagne, and we have had positive evidence lately that our good friend "N. N." is enthusiastically interested in Baldry's Scarlet Defiance, and it appears from "A. D.'s" note that Mr. G. Wythes is a Rhubarb man, as he showed at the Drill Hall, on the 2nd inst., a seedling variety of some excellence from Victoria. If this

variety is a cross between Hawkes' Champagne and Victoria, with some of the good qualities of both parents in it, then it will be an acquisition indeed, and we that are Rhubarb enthusiasts, will be on the look out for it in some nurserymen's catalogue.—N. H. P.

THE LATE MR. JAMES KELWAY.

I TRUST I may be allowed to join with others in expressing my regret on hearing of the death of this eminent horticulturist, and, as our first personal acquaintance was made under very peculiar circumstances, it may be worth relating.

In the year 1872 I was gardener at Killermont, Glasgow, and a member of the Committee of the Glasgow and West of Scotland Horticultural Society, under whose auspices we had determined to hold a grand International Horticultural Show. Among the exhibitors was the late Mr. James Kelway; he was then working very hard in going the rounds of all the principal shows and receiving consignments of his well-known Gladioli blooms from home.

It so happened that he came to Glasgow from Ireland, and in consequence of the rough weather the boat was so late that when he arrived at our show he found the arrangements complete and the judging in that department over. Mr. Eadie, one of the Stewards, came to me and said, "Mr. O., I wish you would come to my tent, as there is an Englishman there with some splendid Gladioli, but he is too late, also he is so excited I can do no good with him." I replied, "Take my duties here and I will soon put him right." I found him as described, and as the delay was caused through no fault of his own, as he could not control the seas, room was at once provided for his exhibit. I next had a consultation with other members of the Committee, and we decided to call in the Judges again and leave it in their hands to do what was right to him as an exhibitor and to us as being financially responsible, and when I mention the names of Mr. Turner, Slough; Mr. Downie, Edinburgh; and Mr. Paul, Paisley, all of world-wide reputation, it will at once be understood that nothing but justice would be administered. The result was an equal first prize together with a number of first class certificates of merit to individual varieties. Thus the rough was made smooth to the satisfaction of all.

After this episode Mr. Kelway never failed to tell me he "never received greater kindness in his life than at Glasgow." Thus was a friendship founded and remained to his dying day. Many were the pressing invitations I received to pay him a visit, and some years ago, on having business in Yeovil, I did so. Never shall I forget the pains he took to explain to me everything he had on hand, and above all things his career through life. With joy and delight he showed me the cottage and the small piece of ground where he started business first, adding, "I and my wife looked at this nice cottage and garden with longing eyes before we were married, and what a remarkable thing that we should ultimately buy it to be our first place of starting business." Comparatively speaking, it was an infant then, but the property made leaps and bounds, and grew into a business of elephantine dimensions. Such is the reward of thrift or industry, careful thought and economy.

To those who are young and starting in life I would say, "Let the memory of Mr. Kelway be indelibly imprinted on your mind; never forget that he started life as a young gardener, and by his own industry built for himself a world-wide reputation, and a magnificent business for his posterity; also remember that some field of prosperity is open to you if you will proceed on the same lines of diligence and prudence, and make the best of opportunities."

With all due reverence we will pay a tribute of respect to our departed friend—the good and worthy James Kelway.—J. OLLERHEAD, *The Gardener Brickmaker*.

TOMATO WINTER BEAUTY.

WHY should "Market Grower" seek to deprecate the usefulness of the fruits of this Tomato by referring to them as "big?" The fruits were not big, neither have I said so. Really the fruits were of excellent market size, and if they look large in the picture that is because the camera tends to exaggerate size. Then this critic states that if the plants had been shown a fortnight or three weeks earlier he would have been better pleased. The Committee judged of the merits of the variety from the fruits shown, from the photograph sent, which exhibited not a portion, but the entire house, and from evidence given by a member of the Committee, who had just previously seen 300 of the plants as presented in the picture in fruit. But "Market Grower" forgets that Mr. Mortimer did have fruits before the Committee a fortnight earlier, when he showed some half hundredweight, which then greatly impressed the Committee. Grown beside Conqueror in the same house the latter was not nearly so good or so early; indeed the display of fruit made by Winter Beauty was not at all done justice to by the photograph, as for the time of year it was quite unique. Then so good were the fruits that they easily obtained the highest prices in the market. Tomatoes presented as winter fruiters, such as Winter Beauty, cannot be grown and tested as such at Chiswick. As its name implies, the variety, which is of dwarf short-jointed habit, is specially regarded as a winter and early spring variety, and that it is such, and a first-class one for the purpose there can be no doubt.—A. D.

It may be, and no doubt is, quite true that the fruits of Tomato Winter Beauty, which secured for the variety an award of merit, were estimated by "provincial judges," as we are editorially informed on

page 435 last week, that this does not meet the real question of a "Market Grower." The point of his remarks lay in the implication that the Committee had infringed their own rule in granting an award to gathered fruits alone and without having seen plants in bearing.

If I mistake not, a rule was made, and acted on time after time, that awards should not be made from fruits alone, either of Tomatoes or Cucumbers, as so much depended on the habit and productiveness of the plants that afforded them, for determining the real merit of a new variety. That is what might be expected from a practical body of men; and is it not a fact that awards have been refused until fruiting plants have either been seen growing at Chiswick in the summer or brought and placed on the Committee table by their cultivators during the winter or spring when plants are not forced into bearing in the R.H.S. Gardens? Have not plants, both of Tomatoes and Cucumbers, been brought to the Drill Hall in accordance with the rule in question before the Committee would make any award, however handsome the fruits that had been previously submitted? If this be so, why the "departure" of which a "Market Grower" reasonably complains?

One thing tolerably certain is this—If an impression is conveyed to the public that exceptions are made in the established methods of dealing with products exhibited, and that the evidence of photographs is admitted as valid, the trust reposed in the Committee is bound to be diminished. The Tomato alluded to may or may not be the best in the world. That is not the question, and a "Market Grower" weakened his own case by his method of treatment and his peculiar, not to say swaggering, reference to the "provinces."—AN INTERESTED PROVINCIAL.

TAR WATER AND LEAF MINERS.

As there has been some inquiry about the use of tar water as a remedy for attacks of leaf miners, I send you a leaflet on the subject, published by the Department of Agriculture in New Zealand. It may be well to make it known that the half pound of gas tar is boiled in 1 gallon of water for twenty minutes, and while *boiling hard* the contents of the boiler is turned out into a vessel containing 50 gallons of cold water. Stir thoroughly, then spray the plants. Most insects dislike the smell of tar, and will get away if possible. This has proved effectual in protecting Chrysanthemums, Cinerarias, and Marguerites from the leaf miner, and Cabbages from the diamond-backed moth.—E. LUCKHURST.

The leaflet, written by Mr. T. W. Kirk, Government Biologist, is most interesting, as well as instructive, and we therefore reprint it for the benefit of our readers.

In 1894 I suggested the use of tar water for this troublesome pest, which damages so many garden and greenhouse plants, pointing out that "tar is obnoxious to all insects, and they will get away from it if possible." The way to prepare the tar water is half pound coal tar boiled in 1 gallon of water, and when boiled for some time diluted with 50 gallons of fresh cold water. When writing the article referred to (in 1894) I mentioned that in Europe a small Ichneumon fly helps to keep the miner in check, but that it had not been seen here yet. Last year (1897) Capt. Brown reported its discovery in Auckland, and soon after I bred specimens here, but in this district it does not make any appreciable difference. The following extracts from letters of a correspondent, a practical gardener, well known to all horticulturists in Wellington, will show the efficacy of the remedy advocated.—T. W. KIRK.

"The Grange, Wadestown, 31st October 1896.

"I would like to tell you my experience with your tar remedy for leaf miner on Cinerarias. I grow a good batch of them here, and last year I followed your directions for using tar as a preventive of the miners' depredations. I sprayed perhaps about half a dozen times, and during the whole growing season I was unable to find a miner on the plants. This year I tried the difference. I have trusted to hunting them, with the result that many of my plants were quite spoiled, and every one was more or less disfigured. The hunting business not only required more time than I could afford, but even when found the insects had already done more or less harm, so in future I will pin my faith on your tar.—Faithfully yours, W. H. TAYLOR."

"Wadestown, 9th September, 1897.

"Some time ago we had a talk *re* Cineraria miner. I told you then that I had tried your tar remedy with satisfactory results. I now report to you result of further trial, and will review my past experience. I used the remedy first in 1895, and had not a single leaf injured until the plants were in full flower, when, owing to the plants being surrounded by other flowering plants, I was unable to use the tar water, then I had plenty of the miner. Some of my gardening acquaintances were sceptical as to the efficacy of the remedy, suggesting that I would have been free from the pest in any case. I could only say that plenty of the insects could be found on the Thistles all over our place, and could therefore see no reason why I should enjoy immunity more than others. Last season, with a view to testing the question, I made no use of the tar water, and before this time was picking off the riddled leaves. This season I have used it again, and up to this date have not seen a single, solitary miner on my plants, about eight in number, though at least two growers have to my knowledge had their plants quite ruined by them, and I saw it on one man's plants about three months ago. When I use the tar water I syringe the glass, staging, and floor of the house mainly, giving the plants a light dose. I do not see how an experiment could be more complete than mine has been, and I am quite satisfied.—Yours faithfully, W. H. TAYLOR."

INCARVILLEA DELAVAYI.

ABOUT a week ago I paid my first visit to the gardens of Gunnersbury House, and, under the guidance of Mr. James Hudson, saw many plants, flowers, and fruits of interest. Foremost amongst them must be placed *Incarvillea Delavayi*, of which a couple of plants in one of the cool houses were flowering splendidly. Its *Gloxinia* like flowers (fig. 101) were singularly attractive, and it is a matter of surprise to me that it is not far more generally grown, especially when the fact that it is almost hardy in our gardens is taken into consideration. The colour is rose to rose pink, the throat being soft yellow. In the latest edition of Robinson's "Flower Garden" the author says:—"Incarvillea Delavayi has lately come from China, and has proved hardy, Mr. Thompson, of Ipswich, writing that it has been a year or more in the open border, having stood the full brunt of a zero temperature. . . . Where it is not happy out of doors it is worth growing in the greenhouse."—WANDERER.

BATH AND WEST, AND SOUTHERN COUNTIES SHOW, EXETER, MAY 24TH.

PERHAPS the unhappy Londoner went home on Whit-Monday (if he went out) thoroughly convinced that no joys remained for him! Had he come down to green Devon he would have enjoyed lovely weather—that is, if he had not stayed until this great show. Those who ventured out on Wednesday morning ought to be credited with good-will to the success of this useful show. All Wednesday morning rain fell heavily, completely saturating the beautiful park-like meadows in which the show was held. Thin shoes and thick shoes alike seemed to get thoroughly sodden. Towards tea-time things began to look a little better, but not very much.

I found that the best place of refuge was within the magnificent tent devoted to the horticultural section. Just inside, on the right (under the ridge of the tent), was a well arranged collection of plants from Messrs. Wm. Cutbush & Son of Highgate. Carnations were specially represented, among others being *Duchess of Fife*, *G. B. Bryant*, *Gen. Stewart*, *Leonard* (new), *La Vilette*, and *Germania*. A long stretch of ground next to Messrs. Cutbush's collection was occupied with well grown plants from B. H. Hill, Esq., Newcombes, Crediton, whose gardener, Mr. G. Lock, filled the space allotted to him with excellent judgment. *Acalypha hispida* (Sanderi) was well shown by Messrs. R. Veitch & Son, Exeter, and Messrs. Cutbush & Son. The next stage was filled with plants from Messrs. Paul & Son, Cheshunt, including some choice *Hippeastrums* and *Roses*, comprising *R. G. S. Crawford*, the new *Teas Sunrise* and *Dawn*, the latter a very showy *Rose*, single or semi-double flowered.

At the other end of these groups stood the splendid plants from Parker's Well, Exeter, belonging to W. Brock, Esq., whose gardener (an Eastern Counties man), Mr. W. Rowlands, has been so successful as a prizetaker in arranging plants for effect. He had done his best, on this depressing occasion, to make visitors appreciate the beauty of the choice stove and greenhouse flowering plants. Coming round the south end of the middle of the tent, on the west side, visitors soon found that Exmouth, the place of grand sunsets and health restoration, was represented by Mr. W. J. Godfrey. *Pelargonium Regina Victoria* is one of the finest whites ever introduced, with a light crimson feather on the upper petals; the flower is large, of perfect form, and beautifully fringed at the margin; *Emanuel Tias*, a *Regal*, somewhat like *Madame Thibaut*, but double the size, both in bloom and truss, whilst the flower is fuller, better frilled, and of much richer colour; and *Duchess of York*, silver tricolor, a dwarf, prettily marked variety, that will be sought after. Not only at this stand, but on others, were some fine double *Lilacs*. There were also *Oriental Poppies*, including *Exmouth Gem*, deep crimson grey, and *A. W. Chiltery*, palest flesh, a large handsome bloom.

At the extreme south end of the tent Messrs. R. Veitch & Son, Royal Nurseries, Exeter, had laid out one of their now well-known waterfall gardens, arranged by Mr. F. W. Meyer, the firm's landscape gardener. "A very clever man," was the remark that we heard a gentleman make (and he has travelled a good deal), as he turned away from the sight of this "rock garden"—natural-looking rock jutting out among grass-covered banks. The water trickled down among the plants, making them happy and prosperous, and led to another pond containing plants of a different class, then disappeared under the rocks. The charming golden *Arum*, *Richardia Elliottiana*, was, to some persons, the most pleasing, while the *Transvaal Daisy*, *Dimorphotheca Eckloni* (lately introduced), with flowers white inside and blue without, gave a fine appearance to the arrangement.

Messrs. John Laing & Sons showed well grown plants, as usual, and filled about 30 feet by 8 feet. Messrs. B. Brown & Sons, St. Thomas, Exeter, had a very gay stand, but rather crowded; but Miss Brown minimised this little oversight by her very choice bouquets, baskets of flowers, wreaths and crosses. Messrs. G. Cooling & Sons, Bath, showed some choice *Clematis* plants in pots, and also cut *Roses*.

Some well constructed span-roof portable greenhouses and frames, glazed with Harding's patent zinc bar, and fitted with simultaneous openings, were on the ground, as well as many fancy pots, tiles, summer-houses. But alas! who could take orders on such a day? While this is being written (25th) the wind is blowing from N.E., and we are looking for fine weather, although we have no sunshine. Those who love rock-work would do well to visit this charming county, in many parts of which rockwork is seen in all its beauty, and in some places in all its ruggedness.—A LOOKER ON.

TAMWORTH PANSY AND VIOLA SHOW.

MAY 24TH.

ON the present occasion this popular show was held in Tamworth Castle grounds, the idea being that the show would be rendered additionally attractive by selecting the venue in question, on account of its having been recently (May 22nd) opened, and dedicated to the public by the Earl of Dartmouth, Lord Lieutenant of Staffordshire. This historic and picturesque ancient castle was acquired in 1897 by the Corporation from the Marquis of Townshend, in commemoration of the Queen's Diamond Jubilee. Tradition says that the town and castle were burnt by the Danes in 911, and rebuilt in 913 by Ethelfreda, daughter of Alfred the Great, and last of the Mercian queens. It was a castle of the Saxon king, and was afterwards held by the Marmions, Frevilles, Ferrers, and other families.

The edifice crowns a knoll—the latter supposed to be of artificial construction 130 feet high—and in its noble round keep is a room where Mary Queen of Scots was a prisoner. The walls and fireplaces of its



FIG. 101.—INCARVILLEA DELAVAYI.

principal apartments are enriched by very old oak panellings and carvings, amongst which exists an interesting chimney-piece in oak, said to have been carved by French soldiers during the time of their imprisonment.

The Castle and its grounds occupy about three acres of ground, and the tall trees surrounding a portion of the Castle mound are laid under contribution by a colony of rooks. A few very old and decaying English Elms are still existent in the grounds, and it was near the chief entrance that the Pansy Show was held, and notwithstanding the unpropitious weather a satisfactory "gate" receipt rewarded the Committee for their selection of the site. The exhibits were numerically considerably below those of previous shows, owing partly to the comparatively adverse season. Lack of quantity, however, was compensated for by quality, more especially in the *Viola* classes.

The chief exhibitor of Fancy Pansies was Mr. T. Naden, Derby, and he was worthily awarded the first prize for twenty-four blooms, dissimilar (open to all, including trade growers), comprising such varieties as *Col. M. R. G. Buchanan*, *Mrs. C. Lambie*, *Maggie Watson* (excellent), *R. C. Allan*, *David Gold Mackay*, *Felicia*, *Attraction*, *Victoria* (very fine), *Provost White*, *Maggie Bell*, *W. H. Clarke*, *Mrs. Bond*, *Mrs. R. G. Moir*, *John Mackie*, *Tamworth Yellow*, *Tom Watters*, *George Stuart*, *Mrs. W. Steele*, *Alice Russell*, *Mrs. D. Johnstone*, *Mathew Alexander*, *Mrs. Proben*, and *Tamworth Herald*. In the class of twelve varieties the same exhibitor again enjoyed a "walk over" with a selection from the foregoing varieties. In the classes for amateurs residing south of the Humber, for twenty-four Fancy Pansies, dissimilar, Mr. Naden again claimed first honours as the only exhibitor.

Councillor Waters was well to the front with six sprays of rayless *Violas*, including *Maud*, *Hibernia*, *Mary Stuart*, *Mrs. C. F. Gordon*, *Formidable*, and *Dorothy Tennant*. The same grower secured the premier

position in the following classes: Spray, six blooms, rayless white Viola, with William Tell, very fine; spray, rayless blue Viola, Blue Gown; spray, rayless yellow Viola, Pembroke; spray, rayed white Viola, Blanche; spray, rayed blue Viola, Britannia; spray, rayed yellow Viola, Stephen; and for twenty-four sprays of Violas (dissimilar). For twelve sprays of rayless Violas, distinct, Mr. J. M. Johnstone, The Gardens, Hints Hall, was awarded the first prize. The flowers were tastefully arranged with Maidenhair Fern and Asparagus foliage. The second prize was allotted to Councillor Waters.

In the class for six blooms of Fancy Pansies, one variety, the first prize was awarded to Mr. T. Naden with John MacKie in excellent form and colour; also the first prize for six seedling Fancy Pansies. In the class open to amateurs residing within ten miles of Tamworth Town Hall, Mr. W. B. Fowler was the only representative, and was awarded the first prize for twelve Fancy Pansies. For twelve sprays of Violas, distinct, Councillor Waters was the only exhibitor, and received the first prize. In the cottagers' classes Messrs. J. Pavie, W. B. Fowler, Chapman, and Shears were the exhibitors of creditable productions.

There was a very attractive display of non competitive exhibits. Mr. W. Sydenham was awarded a silver medal for a splendid collection of Violas in about fifty varieties arranged in sprays, and it is questionable if a better stand has ever been seen elsewhere. Two new varieties raised by the exhibitor were selected for special awards (F.C.C.). Lark (1899) a beautifully formed flower, creamy white with a heliotrope coloured border, a perfect rayless flower, and one of the best for exhibition; Mr. Sculthorpe, also new, a splendid rayless flower of a rich yellow colour in the way of Pembroke. Other noticeable varieties were Golden Bee, Kingcup, Melampus, Symphony, Sidney, Ethel Hare, Auricula, Bouncer, Kathleen, Marblehead, Thunderer, Mrs. A. D. Parker, and Minnie Warren. A certificate of merit was adjudged to Mr. Sydenham for floral decorations, amongst which was a harp shaped arrangement of exquisite beauty, the framework being composed of Violas Blanche and Sweet Lavender, while the strings were formed of Tom Thumb, a curious Violette.

Mr. J. M. Johnstone was the first prizewinner for a table decoration, most tastefully arranged with blue and yellow Violas, and Fern and Asparagus foliage. The same exhibitor also secured the first prize for a floral design, composed of white and yellow Violas, forming an arched gateway; also a certificate of merit for a collection of plants, in which some fine Calceolarias were conspicuous. Mr. W. B. Child, Acocks Green, had a large and interesting collection of Alpine plants in flower, including several rare varieties. Mr. Robert Sydenham had examples of rustic table decorations. This exhibit was much admired, being composed of white and pink and Uriah Pike Carnations and Roses, to which a certificate of merit and silver medal were deservedly awarded.

ST. PETERSBURG INTERNATIONAL EXHIBITION.

To bring an exhibition under such a climate and conditions as those of the town of St. Petersburg to a successful issue, requires a considerable amount of tact and an immense amount of energy on the part of the organisers, who, in this particular instance, cannot be too highly praised, although their efforts were not crowned with the greatest success. In an horticultural exhibition of this character—that is to say, held in a part of the globe where the severity of the climate is extreme, and where, up to the eve of the opening, snow on the roadsides and ice on the rivers are still the order of the day, it is easily understood that the great bulk of the exhibits should be foreign produce, the native article being, however, of very good quality, especially when all the cultural difficulties are taken into consideration.

The greatest drawbacks, the stumblingblock in fact of the organisers of such an undertaking, is the slowness and apathy of the officials in the matter of despatching goods entrusted to their care. This has been the cause, in this instance, of many disappointments, as exhibits which had been forwarded in good condition, and which had reached the Russian frontier several days before the date of the show, were exposed so long to the influence of very cold and frosty weather that they arrived at their destination either completely spoilt or so late that they could not take place in the competitions for which they were intended.

Besides the Russian exhibitors some 250 or more continental firms sent their produce. England was very creditably represented by Messrs. J. Veitch & Sons, Ltd., who staged a splendid collection of Nepenthes, Sarracenia, and other carnivorous plants, which were the admiration of all the visitors; although exhibited out of competition this most interesting group received a large gold medal; and also by Messrs. R. Ker & Sons of Liverpool, who contributed about five dozen of their beautiful Amaryllis, showing some splendid tints from pale cream, streaked with red, to the brilliant scarlet and dark crimson colours peculiar to that class of plants; this was awarded a large and a small gold medal; while for their group of new plants Messrs. F. Sander and Co. of St. Albans received two large gold medals.

Among the Continental exhibitors the principal prizewinners were:—Messrs. Moser, Mantin, Lachaume, Compont, Chantrier, Boucher,

Defresne, Delavier, Sallier, Duval, Paillet, Martichon, Peeters, Vincke Dujardin, Massange Le Louvrex, De la Devansaye, Louis De Smet, Croux, Seidel, Hermann Krautz, Max Ziegenbalg, Olberg, Hanisch, and others. We hope next week to give a fuller account of the prizes won by the exhibitors of the various nations that have taken part in that great tournament which was held in the Palais de la Tauride, in which it is said that the fêtes given by Prince Potemkine for the reception of Empress Catherine II. greatly surpassed in magnificence those given previously by Louis XIV., or by his intendant, the great Foutquet, at the Palace of Versailles.

The disposition of an horticultural exhibition at St. Petersburg is totally different and distinct from all we are in the habit of seeing in England, for with the exception of fine specimens of trained fruit trees and of Conifers which were planted outside, and of the Orchids and of the English exhibits, for which well-heated greenhouses had been specially built, all the other exhibits, foliage and flowering plants alike, were located in the vast rooms of the Palace itself, and the general effect of the Show, although of a very imposing nature, was greatly marred by the numerous columns of very large dimensions which form an important feature in this remarkable building.

The groups, taken separately, could, however, be well examined, and there were, besides a quantity of Palms, of decorative quality which appeared to have been sent for disposal more than for show, some remarkably fine groups, such as Rhododendrons in full bloom, Azalea indica and A. mollis, and Roses in pots shown to perfection by Russian exhibitors. It was feared at one time that the Orchids which the Belgian growers had intended for the show would not arrive in time, as they had been delayed at the frontier, but they were fortunately received, and added greatly to the importance of an exhibition such as had never been seen in Russia.

We must here add that Mr. Siesmayer, the able director of the gardens attached to the Palace, was most energetic in helping those of the exhibitors who were in difficulties (and there were many) through the want of knowledge of the native language, and for his kind help he well deserves the thanks of all who have had to apply to him.

It is gratifying to record that the Emperor took special notice of the English exhibits. His Majesty, on the opening day, paid great attention to the group of carnivorous plants, and with the Princess Feodorowna and their suites, was much interested in the peculiarities of the plants, to which Mr. J. H. Veitch, who accompanied them around the group, called attention.

Although this exhibition is a remarkable illustration of what can be done with produce brought from far distant countries, it must be admitted that so far as management is concerned it is anything but satisfactory, for ten days after the jury had started its work the prizes awarded to many exhibitors were not published. For several days jury after jury have had to judge exhibits which either had not arrived in time or which from other causes had been left unjudged. We can, therefore, simply note that Mr. Moser, of Versailles, exhibited a magnificent group of hardy Rhododendrons, large specimens in baskets; that Mr. Croux had a very handsome collection of Conifers; that Mons. Louis Leroy, of Angers, sent fine specimens of Magnolias and of Camellias in pyramidal shape; while Mons. Honoré Defresne and Mons. Bruneau showed well-trained fruit trees. Messrs. G. Vincke Dujardin and De Clercq Van Gysegheem showed also some magnificent Bay trees (standards and pyramidal shaped), such as Belgium only can produce.

Inside the houses the Orchids from France and Belgium attracted most attention. They were those of Messrs. G. Mantin, Peeters, Massange de Louvrex, and G. Vincke Dujardin. A special mention should also be made of the wonderfully fine collection of New Holland plants shown by Mons. E. Bedinghaus of Ghent, comprising Acacias, Eriacas, Eriostemons, Diosmas, Boronias, Chorozemas, Correas, such as are very seldom seen nowadays. The Palms of the Société Anonyme Gantoise were also a remarkable feature. Conspicuous among them were Latania Commersoni, Arecia Ilsemani, Calamus intermedia, Livistonia Jenkensi, a unique specimen of Phoenix Roebelinii, Oneosperma Van Houtteana, and many others equally rare.

Some beautifully flowered Bougainvillea Sanderiana were shown by Mons. J. Sallier of Paris, and the Paris floral decorators, Messrs. Lachaume & Delavier, had also largely contributed by their work to the success of the French section, as did the Syndicate of Primeuristes, who showed some very good examples of Peaches, Cherries, and Melons. Mons. Chantrier had an interesting group of Crotons and Anthuriums. Mons. Martichon of Cannes, Mons. Wagner of Leipzig, and Mons. Max Ziegenbalg of Dresden showed large commercial Palms, while Mons. Seidel of Dresden exhibited a splendid collection of Azalea indica grafted upon Rhododendrons, and also one of dwarf Rhododendrons, which were very attractive, and it is only a matter of regret that even now it is not possible to give the names of the prize-winners at St. Petersburg.

"FAMILIAR WILD FLOWERS."—Rather more than one-third of the total number of parts of this work have now been published, and we find in Nos. 8 and 9 the following twenty plates, executed with the same excellence that characterised the first issue. Bee Orchis, Hemp Nettle, Water Cress, Cherry, Salad Burnet, Marsh Thistle, Teasel, Red-berried Bryony, Wood Loosestrife, Water Avena, Butterfly Orchis, Dewberry, yellow Rocket, Goosegrass, Saw-wort, narrow-leaved Everlasting Pea, yellow Deadnettle and the Stitchwort, tuberous Moschatel, Lambstongue, and Upright Meadow Crowfoot.

THE YOUNG GARDENERS' DOMAIN.

SUMMER BEDDING.

THE last week in May is generally found early enough to commence bedding out, but much depends on the climate of the district. Some flower gardens are bleakly situated, in which case the planting is better left until the first week in June. No time, however, should be lost then in getting the whole of it completed by the middle of the month, as the weather generally becomes hotter about Midsummer's day, and the plants when left in pots demand incessant watering, frequently become stunted, and then do not grow so readily as when they are planted in early June.

If a considerable amount of bedding has to be done, all available hands should be requisitioned, so that it may be quickly finished, and, provided that the soil is in proper condition, a week generally suffices to complete the whole. Where spring bedding is done, the soil in most cases will want enriching, but judgment must be exercised. Wallflowers and Violas impoverish the soil very much.

When the spring plants have finished blooming, they should be promptly removed, and leaf soil and spent Mushroom manure be dug into the ground, and if the soil is dry it must be watered about two days prior to planting. Here again care must be exercised, or the planter will be greatly handicapped. The plants must be thoroughly watered the evening before planting, if the weather is dry, as they turn out of pots and plant better, in a moist state, but, on the other hand, if made too wet, the ball of soil is apt to drop off, and the plant of course is greatly checked. If dry the beds should be well watered after being planted, then Dutch-hoed carefully so that the surface may be loose.

All young gardeners should endeavour to make a tour through the London parks every year about the beginning of August, as the beds there are objects of great beauty, and of a style not met with in the majority of private establishments. Personally, I have spent many hours near them, taking notes of the different methods adopted in planting. The greatest credit is due to the able superintendent and staff for the admirable and effective display annually made.—FOREMAN X.

NEWLY PLANTED APRICOTS.

THE autumn is undoubtedly the most suitable time for planting fruit trees, and the sooner this operation is performed after the fall of the leaf the greater will be the probability of satisfactory growth in the succeeding spring. In selecting trees the choice should be given to those of perfect shape and with abundant fibrous roots; they must be moderately strong in growth, but not on any account coarsely grown, and tap-rooted, as these lead to considerable disappointment. Every care should be exercised to prevent unnecessary injury to the roots, laying every one out evenly and as near the surface as may be convenient.

The soil must be in a moderately moist condition, but on no account should the trees be planted if the border be really sodden. Good soil must be worked well amongst the roots, treading firmly as the work of rilling in proceeds, and then sufficient water may be given to settle the soil round the roots. Then place over the surface 2 or 3 inches of half-decayed stable manure. Should the weather be very wet, or in the event of sharp frosts, the border will need protecting throughout the winter season, but the branches must only be loosely attached to stakes to prevent them being blown about and broken by the wind.

At the commencement of growth the trees will demand frequent attention; the side shoots may be allowed to attain a length of 15 to 18 inches, pinching the tips out at this stage, leaving them at intervals of 9 or 12 inches along the main branches. There will perhaps be a tendency for one side to outgrow the other, and this must be corrected by stopping and thinning the side growth more freely, and in the weaker parts allowing more freedom of growth. Always encourage the free admission of light and air, as each branch then becomes well ripened and fruitful, and thus fulfils its proper functions.—F. W. G.



FRUIT FORCING.

Cherry House.—The crop generally being now ripe, consideration must be given to keep the fruits fresh so as to prolong the season. Shading will effect that, but it is undesirable where the fruit is not exposed directly to the sun, otherwise it will be necessary to have recourse to it. Only light material, such as hexagon netting, should be used. Free ventilation must be attended to, and in warm weather a sprinkling of the surface of the border in the hottest part of the day will assist in keeping the fruit plump. The roots must not be neglected for water, as dryness is inimical to the foliage, and on the preservation of this in health depends the proper formation of the buds for the ensuing crop of fruit.

Vines.—Where Grapes are hanging afford sufficient water to the inside borders to maintain the soil in a moist condition. No injury will result to the Grapes provided the atmosphere is not stagnant, but air must be given more or less constantly. When the Vines are cleared of

ripe fruit the foliage should be cleansed of dust and red spider, employing tepid water, and if necessary an insecticide, as keeping the foliage clean and healthy to the last is important for aiding the formation of buds for another season. The leaves being fresh and clean keep the laterals in check by pinching.

Houses with the Fruit Swelling.—Although fire heat cannot be dispensed with at night and on dull cold days, much may be done in economising fuel by closing early on fine afternoons. There must be plenty of atmospheric moisture, but avoid a saturated atmosphere by a little ventilation at night, and increasing it early in the morning. A moist atmosphere is essential to the swelling of the berries, and it should be secured without stagnation by damping the floors and borders two or three times a day—in the morning, at closing time, and before nightfall. Do not allow the laterals to grow so as to crowd the principal leaves, but keep them well in hand. Where, however, there is plenty of space they may be allowed to extend, yet not so as to necessitate their removal to a great amount later on. The temperature should be maintained at 65° at night, or a few degrees less on cold nights, 70° to 75° by day, and 80° to 85° from sun heat, allowing an advance to 90° after closing, or early in the afternoon. Due attention must be given to watering, not at stated periods, but always when it is required. Liquid manure or top-dressings of fertilisers will be necessary for the proper swelling of the berries, and for the perfecting of the crops. But remember a large or excessive amount of liquid in a soil does not necessarily imply a corresponding quantity of available plant food, for the measure depends upon the oxidation of the food elements and the degree of this on permeability by air and water.

Houses with the Grapes Ripening.—Allow a constant and liberal supply of warm, rather dry air; but a genial condition of the atmosphere is necessary for the benefit of the foliage, yet the air moisture must not be excessive or stagnant, as it will prejudice the ripening. Do not neglect to supply water at the roots, and if nourishment is given it should be of a sweet nature, or the Grapes may be tainted, as they are with late applications of soot and other organic matter. If a light mulching of sweet short litter be applied, it will tend to sustain the Vines, and to a more equable moisture at the roots. A good heat is necessary to secure the highest quality; indeed, there is no comparison between Grapes that are properly finished in a rather warm and well ventilated atmosphere and those ripened in a low and moist temperature.

Grapes Scalding.—Muscats and other varieties completing the stoning should be carefully watched in hot, bright weather; and in case of scalding air must be admitted more freely, or until the colouring commences. At that period all danger will be past as regards the black varieties; but Muscat of Alexandria will scald when well advanced in colour, and it is necessary in houses glazed with large panes of glass to employ a slight shading, as that of herring netting, over the roof-lights in very bright periods. With Hamburgs and black Grapes generally it is different; they colour best beneath a good spread of foliage, and it is one of the best means of avoiding scalding, provided the supply of air be bountiful by day and a little ventilation left on constantly at the upper part of the house, with a genial warmth in the hot-water pipes, increasing the ventilation very early in the morning. A temperature of 65° to 70° by artificial means suffices, or a little less for Hamburgs.

Late Grapes.—Where the Vines are in flower a constant supply of dry warm air will further a good set of fruit, the temperature being kept at 70° to 75° by artificial means, and rising to 80° or 90° with sun. Thin the berries freely immediately they are set, but this, in the case of the shy setters, must be confined to the removal of the smallest and imperfect berries in the first instance, deferring the general thinning until the properly fertilised berries can be detected by their free swelling. There must not be any deficiency of moisture at the roots or of nourishment, therefore afford liquid manure copiously after the Grapes are thinned and swelling, or a top-dressing may be given of some approved fertiliser, distributing it evenly over the surface, and work in moderately. If the weather be dry and the soil light outside borders will need watering, affording liquid manure or top-dressings of chemical manures if the Vines are not very strong or are carrying a full crop.

Young Vines.—Those in pots for next year's fruiting should be stopped at 8 to 9 feet, that length of leading shoot or cane being sufficient, and the laterals or sub-laterals pinched at one leaf as produced. Supernumeraries in recently planted houses should also have the canes stopped at the points named, the laterals and sub-laterals being closely pinched. This will concentrate the energies of the Vines in the principal leaves and their buds, and is necessary for those intended to fruit next season. The permanent Vines, however, may be allowed to make all the growth there is room for, which should be accelerated by closing the house early on fine afternoons, admitting a little air before night, and increasing it early in the morning of fine days. When young Vines become established they will require abundance of water at the roots, yet avoid making the soil sodden by needless applications, and sprinkle the paths and borders two or three times a day so as to maintain a genial condition of the atmosphere.

BUSINESS ANNOUNCEMENT.—We are informed that for family reasons the business of Mr. J. T. Anderson has been converted into a limited company under the style of James T. Anderson & Sons, Limited. Messrs. D. & E. Caird, who have taken an active part in the management of the business for some years, join the directorate, so there will be no practical change in the conduct or management of the business. Mr. J. T. Anderson will be the managing director.

THE BEE-KEEPER.

INCREASE OF STOCKS.

As the time is rapidly approaching when the majority of the stocks in the apiary will be overflowing with bees, it will be necessary for bee-keepers to decide how many extra colonies are required to bring the apiary to its full strength. If a small increase only is desired, a surplus of honey may also be obtained should the weather be favourable when the honey flow comes. One important fact should always be kept in mind where the honey harvest is chiefly obtained from the white Clover—that only in exceptional seasons is it possible to obtain an increase of stocks as well as a large surplus of honey from a colony, however strong it may appear to be. Our seasons are too short to allow the bees to waste their time and energy in swarming. Hence the reason we so strongly advocate the building up of strong stocks, that will take full advantage of every bright day when the nectar may be obtained from the innumerable open flowers within flight of the apiary.

The plan we have adopted—with complete success when working for an increase as well as a surplus—was to select a given number of hives which were crowded with bees, each colony being headed by a queen reared the previous season. They received similar treatment to those intended for honey production. Instead, however, of providing them with extra frames slightly in advance of their requirements, we usually confined them to ten frames, as from a hive with this amount of breeding space a strong swarm can be obtained. Although a stock may be crowded with bees, and be ready for swarming at an early date, all will depend on the weather whether they swarm or not. If it should be cold and wet, as it has been for several days past in this district (South Yorkshire), feeding must not be neglected, otherwise they will deteriorate even more rapidly than they increased. The first symptom of shortness of stores in a hive at this season is the casting out of the young grubs on to the alighting board. This may be at once stopped by feeding with warm syrup in the evening.

ARTIFICIAL SWARMING.

Instead of waiting for the bees to swarm naturally, artificial swarming must be induced. It, however, requires to be done in quite a different manner when the bees are kept in the modern frame hive from that practised with the straw skep. In the latter case they require drumming similar to driving bees to obtain their honey in the autumn. But with frame hives, it may be termed dividing a stock.

In commencing operations, the first thing to do is to choose a warm, bright day, when numerous bees are on the wing, and it will thus be much easier to find the queen. Remove the coverings from the tops of the frames, using a little smoke to drive the bees down between the frames. The less smoke used the better. If the operator is gentle in his movements, it is surprising how easily bees may be handled at this season if a high temperature prevails.

Lift out the combs, and carefully examine each one until the queen is found. The comb with the queen and the adhering bees should then be placed in an empty hive, another comb with the adhering bees, and a frame of comb foundation, or fully drawn out comb, should be placed alongside, and the division board closed up. If the combs are not well covered shake the bees off another comb from the original hive. The hive containing the queen and bees should then be placed on a separate stand.

Returning to the original stock from which the queen was removed, lift out each frame and slightly notch the bottom edge of the combs containing newly laid eggs; a few holes may with advantage be cut through the combs. At each place a queen cell will be formed. Draw the division board close up to the combs, and ten days afterwards divide the colony into as many nucleus hives as may be required.—AN ENGLISH BEE-KEEPER.

MANCHESTER SHOW.—When our reporter left the Show, a splendid collection of Gloxinias, staged by Mr. John Upton, The Nurseries, Irlam, had not been noticed. As this grower has been successful in improving the Gloxinia, the silver medal awarded by the Council is richly deserved.

DAFFODILS IN MIDLOTHIAN.—In the paragraph dealing with the newer varieties of the great trumpet Daffodils at Valleyfield, it should have read, "A large batch of the dapper J. B. M. Camm, evidently in high favour with Mr. Cowan; beside him, somewhat later in bloom, Mrs. J. B. M., a sweetly-mated pair of relative size not unusual in actual life." Mrs. George Cammell is correct, not Cannell.—A NORTHERN AMATEUR.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Soil for Grape Growing (Constant Reader).—The proper proportions of the articles named by Mr. Abbey on April 27th, page 324, to make a compost for Grape growing are—five barrowloads of loam, one barrowload each of lime rubbish, charred earth or wood ashes, and horse droppings, and a peck of soot, or one part in ninety-six of the latter to the compost. Thus for any quantity of soil the proportion of soot may readily be ascertained.

Sowing Runner and Dwarf Kidney Beans in Boxes (E. T. H.).—We do not consider that sowing these in boxes and when large enough transplanting to their proper quarters better than sowing the seed in the ground. Sowing in pots and turning out the plants with the balls of roots entire is better practice than the sowing in boxes and transplanting; but the plan is only resorted to for the sake of earliness, not for general crops, which are best sown where the plants are to remain for bearing.

Newly-made Garden Infested with Wireworm (C. G.).—To save the crops we should at once strew rape dust on the ground at the rate of 5 cwt. per acre, 3½ lb. per rod, and follow in the course of a few days with the mixture you have been using—namely, two parts kainit and one part nitrate of soda, both crushed very fine, using 3½ lbs. of the mixture per rod. The rape dust will bring the grubs up to feed, and the other mixture ought to destroy them; at any rate, both mixtures will help the crop. When the land is clear use a dressing forthwith of mustard dross, ½ oz. per square yard, and point-in very lightly. You may crop the land shortly afterwards, there not being any occasion to let the land lie fallow, or only for a few days. The mustard dross, had from the mustard manufacturers, must not be used on growing crops, or in a much less quantity, say, ¼ oz. per square yard.

Diseased Tomato Plant (Grower).—The plant is affected by "drooping" or "sleepy" disease fungus, *Fusarium lycopersici*, which has apparently entered the Tomato plant from within—that is, has gone over in the seed. The root stem and roots are perfectly healthy. But near the first truss of bloom the mycelial hyphæ of the fungus has attained considerable development, extended quite half and in some places three-parts round the stem, easily recognised by the brown colour when cut through. Above this point the fungal hyphæ or mycelium has quite surrounded the stem and cut off the supply of sap to a great extent, thus causing the drooping of the foliage and ultimate collapse of the plant. One of the largest growers of Tomatoes in the country admits little trouble from the disease where lime or basic slag and kainit have been used as preventives. Strengthening the plant by judicious applications of mineral substances to the soil, careful selecting of seeds from healthy plants, rejecting all weaklings in potting, growing sturdily, avoiding too moist and close an atmosphere, appear to be the panacea for this disease.

Mulching Fruit Trees—Grass versus Manure (F. H.).—The mulching with manure is the better practice, and certainly pays in commercial culture after the trees come into bearing and are not made too vigorous by the applications. It supplies the essential elements of nutrition in a steady manner, and favours the abstraction of moisture from the atmosphere, as well as the conservation of water in the soil and near the surface where the roots are situated, or should be, for health and fertility. The grass acts usefully in the same way, but in a less marked degree, as manure. If the trees are vigorous we should certainly prefer the grass to the manure. Indeed, we have used it very extensively for mulching fruit bushes and trees, and found it advantageous in conserving the soil moisture and in supplying humus to the land. It decays and yields nutrient matter, which can be supplemented by dressings of fertilisers—superphosphate and kainit in equal parts, applied in autumn at the rate of 3½ lbs. per rod, and in spring when the buds start, apply nitrate of soda, 1¼ lb. per rod. The superphosphate and kainit mixture may be pointed in along with the remains of the mulching of grass, thus being equal to, or better than a dressing of manure, and the nitrate of soda left on the surface, but applied when this is moist, never when the ground is dry.

Selling Asparagus (J. D.).—Asparagus is usually sold in bundles of 105 heads, but much is sold locally by several growers in bunches of twenty-five heads. Prices in Covent Garden vary every day, according to the character of the produce and the abundance or otherwise of the supply. The figures have recently ranged from 1s. 6d. to 3s. 6d. per bundle.

Peach Leaves Blistered (J. P. L.).—The leaves sent are seriously attacked by the blister fungus, *Erysiphe deformans*. It appears to be induced by torpidity of the sap, as it is almost invariably the most prevalent after a term of cutting winds. Clip off the worst portions and burn them, leaving all green parts of the leaves, and on the return of genial weather the trees will improve.

Orobis hirsutus (H. James, Dorset).—Such is the botanical name of your specimen, which is one of the Bitter Vetches. It is found in several



FIG. 102.—OROBIS HIRSUTUS.

countries of the Levant, appears to have been known in Holland a considerable time before it was introduced into this country about eighty years ago. The flowers (fig 102) are useful for cutting; the colour is blue in the standard and wings, and in the keel white. Almost any ordinary fertile garden soil suits this plant. It grows and flowers freely, and produces abundance of seeds in favourable seasons.

Vine Leaves Warded (A. B.).—The cause of the Vine leaves being warded is a close, moist, and warm atmosphere. Warding may be avoided by judicious ventilation from the Vines bursting into leaf, always avoiding a close and moist atmosphere with a high temperature in the early stages of growth without some air, so as to allow of evaporation from the foliage, and thus prevent what may be termed extravasated sap. In other respects the leaves are perfectly healthy, but the warding prevents the leaves from properly performing their functions, and they mature earlier than would otherwise be the case, and the Vines are weakened.

Shelter for Garden on Sea Coast (Ret Rail).—Of shrubs the best is the Sea Buckthorn (*Hippophae rhamnoides*), as it withstands the fiercest blasts in the most exposed situations, affording excellent shelter, the remarkably twiggy branches sifting and dividing the wind in a remarkable manner. Next to this is the common Elder (*Sambucus nigra*). It grows strongly where its branches are constantly exposed to the saline-laden breeze. As a hedge it forms an excellent wind screen, but it is better allowed to spread, or having two or three lines. As an evergreen Austrian Pine (*Pinus austriaca*) excels all others. It should be planted in a dwarf sturdy condition, at least three lines deep in quincunx order, and then it will give shelter on the most wind-swept situations, and at altitudes up to 750 feet above sea level.

Diseased Gooseberry Shoot (W. C.).—The leaves and berries are attacked by the Gooseberry fungus, *Aecidium grossulariae*, which is rather prevalent and disastrous this year. There is no remedy, but the disease may be prevented spreading by the removal and prompt burning of the attacked leaves and berries. The cluster-cups are ripe and discharging the spores in myriads, hence spraying with sulphide of potassium, 1 oz. to 3 gallons of water, directing the spray upwards so as to reach the under side of the leaves may do good. In the *Journal of Horticulture*, vol. ix., third series, Mr. Graham describes his method of prevention as follows:—"In 1868 and 1869 about one-third of the fruit became blotched very much by this fungus. I gave the ground amongst the bushes a liberal dressing with lime in the autumn, and syringed them over with a compound of alum 1 drachm, tobacco essence 2 drachms, flowers of sulphur half an ounce, common salt three-quarters of an ounce, all mixed in 3 gallons of rain water. This was done twice before the expanding of the leaf, and again as soon as the fruit appeared fairly set. The first destroyed the germs in the soil, and the syringing cleared the bark of its sporules, and my Gooseberry bushes are now free from all traces of the fungus." Do likewise and there may not be any trouble from parasites next year.

Sulphuring Hot-water Pipes in Vinery (Cross).—1, We have known sulphur applied to hot-water pipes heated to 140° shortly after the Vines have been started. 2, "A month after." 3, "Any time up to the flowering period." 4, The practice has "been tried" and not "found to be injurious." 5, There was no difference "with Gros Colman, Alicante, or Muscats." 6, Yes, but not very effectively, as some would refuse to come away; hence there was more or less afterwards of "a continual sulphur atmosphere," and in this the berries did not "rust." 7, "We have not found the sulphuring injurious to the young shoots or leaves in June or July, why should it be so early in the season?" Answer, because the hot-water pipes are never so highly heated in the months named as constantly early in the year, consequently the Vines are not kept indefinitely in "a continual sulphur atmosphere." This is the crucial point—early in the season the hot-water pipes are very seldom below 140°, but very often, and in severe weather, for weeks over 170°, at which sulphur begins to vaporise or give off sulphur fumes proper, and it is these that stifle the insects or fungi, also injure, when in excess, the Vines. That just makes all the difference. A temperature of 140° is not sulphuring, and has not the slightest effect on red spider, so that the Vines would not be clean. We have used sulphur after thinning, therefore the dictum "cannot be done" does not hold. 8, "Lysol" is a preparation from coal tar made in Germany, and corresponds with soluble phenyle, cresoline, creolin, and izal, being modifications of the same substance. It may be obtained through a chemist.

Names of Plants (R. L.).—1, *Anthericum variegatum*; 2, *Nephrolepis exaltata*; 3, send when in flower, possibly *Gloxinia speciosa*; 4, *Dielytra eximia*; 5, *Saxifraga granulata* fl.-pl.; 6, *Hutchinsia alpina*. (C. D. B.).—*Trollius europæus*, the European Gloe Flower. (C. W.).—1, *Cercis siliquastrum*, the Judas Tree; 2, *Paulownia imperialis*; 3, *Aesculus carnea*. (J. C. B.).—The Orchid is a very good form of *Zygopetalum crinitum*. The remainder of your specimens are varieties of *Azalea indica*, which come within the category of florists' flowers. These we do not undertake to name. Send specimens to one of the leading nurserymen, who will name them for you by comparison with the varieties in their collection.

COVENT GARDEN MARKET.—MAY 31ST.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 3	3 6	Lemons, case ...	30 0	to 60 0
Grapes, lb. ...	1 6	2 6	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	1 6	to 3 6	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches ...	1 6	to 2 0	Lily of the Valley, 12 sprays	0 4	to 0 10
Arums ...	3 0	4 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch ...	2 0	2 6	Maidenhair Fern, doz.		
Azalea, white, doz. bnchs.	3 0	4 0	bnchs. ...	4 0	6 0
Carnations, 12 blooms ...	1 6	3 0	Mignonette, doz. bunches	4 0	6 0
Daffodils, single yellow, bch. 12 blooms ...	0 6	0 8	Narcissus, doz. bnchs. ...	1 0	2 0
Daffodils, double, bunches	0 4	0 6	Orchids, var., doz. blooms	1 6	9 0
Eucharis, doz. ...	2 0	3 0	Pelargoniums, doz. bnchs.	4 0	6 0
Freesia, doz. bnchs. ...	2 0	3 0	Paeonies, doz. bnchs. ...	4 0	8 0
Gardenias, doz. ...	1 0	2 0	Roses (indoor), doz. ...	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Red, doz. ...	2 0	4 0
Hyacinths, Roman, bunch	0 4	0 6	„ Tea, white, doz. ...	2 0	3 0
Iris, per doz. bunches ...	6 0	12 0	„ Yellow, doz. (Perles)	2 0	3 0
Lilium Harrisii, 12 blooms	3 0	4 0	„ Safrano, doz. ...	2 0	2 6
„ longiflorum, 12 blooms	4 0	6 0	Smilax, bunch ...	3 0	4 0
Lilac, bunch ...	4 0	5 0	Tulips, bunch ...	0 4	0 6
			Violets doz. bunches ...	0 6	1 6
			„ Parme, bunch ...	2 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Foliage plants, var., each	1 0	to 5 6
Aspidistra, doz. ...	18 0	36 0	Fuchsias, doz. ...	4 0	6 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, doz. ...	4 0	6 0
Boronia ...	12 0	18 0	Hydrangeas ...	6 0	10 0
Crotons, doz. ...	18 0	24 0	Lilium Harrisii, doz. ...	12 0	18 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	8 0
Erica various, doz. ...	9 0	24 0	Myrtles, doz. ...	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var. each ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	„ specimens ...	21 0	63 0
Ferns, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	4 0	6 0
„ small, 100 ...	4 0	8 0	Solanums, doz. ...	6 0	12 0
Ficus elastica, each ...	1 0	7 0	Stocks ...	4 0	6 0

Bedding out plants in variety from 3s. doz.



STUD BABIES.—No. 2.

THE young foal being now upon his legs and with a good notion of feeding, either directly from his mother or indirectly by bottle from a cow, we will consider his life for the next few weeks.

No foal, or indeed any other animal, can thrive among dirt, so it is essential to the well being of both mare and foal that their box should at once be thoroughly cleansed. Attention must be paid to the cleansing of the milk teats, which from natural causes often become objectionable. It can easily be conceived how soon the delicate stomach of a foal may be thrown wrong by the reception with the milk of foreign matter.

Next must be considered the housing of the mare and foal. English spring weather is particularly treacherous, bright sunshine, sharp winds, sleety showers, follow each other in quick succession—in fact, we might say, “extremes meet” even in twenty-four hours. Fresh air and ventilation are required, but no draughts or chills. Early foals cannot expect to be turned out soon, exercise they must have, and if the weather is against a gentle walk round, surely there is on every farm a yard well shedded where exercise is obtainable.

A careful man will gladly give up half an hour just at midday to watching mare and foal out for a stroll. Coddling will not do, and the stable ought to incline to coolness rather than stuffiness. It is a practice now where large studs are housed to run up boxes of wood. We have known several cases where during a severe spell of wintry weather these boxes have been bitterly cold, and the manager has been at his wit's end to know what to do with his mares and young foals. Those foals, however, stand a better chance of a healthy start than others which are recklessly taken out of a very hot close box and exposed to bitter winds and bright suns. They, poor things, are tempted to gallop about a bit, get suddenly chilled and fall ready victims to pneumonia. Be on the watch for the first few days when the foal is turned out, and bring up directly should the sun go in or a heavy shower come on. Like all young animals the foal is very imitative, and will soon try to share with its mother the dry food. See that this dry food is good and suitable. It is a fine thing when young animals begin to “fend” for themselves.

“Weaning time” is a movable feast. So much depends on the constitution of the foal and on its ultimate career. A weakly foal must have its mother's milk as long as possible—that is, taking into consideration her welfare. If a foal be of wonderful pedigree and handsome in shape and size, the owner naturally wants it to excel, and therefore will keep it with its mother, where a less valuable animal would be weaned. Those foals intended for the show yard have the best of good times—a mother solely devoted to them, and all sorts of additional choice food supplied.

Many mares have to resume their daily tasks while their offspring may be yet young. The hours of separation should not be too long, nor should the mare be put to very hard work. She cannot spend her strength two ways. Milk must be generated, and to be good she must not be allowed to get exhausted.

For the same reason it is well to see the mare has access to good water, and that her diet be not rapidly changed. Remember change of diet may easily affect the foal, and bring on obstinate diarrhoea, and diarrhoea once established is bad to get rid of, indeed its ill effects on the intestines is often lifelong.

There are other ailments to which foals are liable, such as joint ill, which is a form of blood poisoning. It may occur when the foal is from a week to a month old, and is usually fatal. Proceeding as it does from dirty condition, it may be classed among the “preventible diseases,” and therefore should not be allowed to exist in a well managed stud. This ailment begins by the entrance of destructive

organisms into the blood vessels which have been broken by accidental tearing of the navel cord from the body of the foal. As long as any such wound exists it should be most carefully dressed with some disinfectant, carbolic oil for choice, and the dressing ought to be attended to at least five or six times daily.

Hernia or rupture is not an uncommon ailment among foals. Although this may not assume serious dimensions, it is as well to call in professional aid at once and have the matter adjusted. The “Vet” will know exactly what to do, and whether it is a case for severe or simple remedies.

We have often been sorry to see the lack of care exercised for foals after they are weaned and during the first winter of their lives. They are too often turned out all the winter on grass with a very insufficient supply of hand food. Winter grass contains little or no nutriment, and how can the poor animal be expected to grow and thrive on an empty stomach. We do not believe in pampering them, that is unnecessary, but a liberal supply of good food pays for itself.

You want bone and muscle and strength for work; all this goes in by the mouth. It is only a short childhood that horses have—that is, the average farm horse, and he must make the best of this growing time if he is to be of any value later on. There is such a thing as going to the other extreme and overdoing the feeding with too much dry corn, which is the occasion of so much fever in the feet. There is a happy mean which men of intelligence will arrive at without much difficulty.

WORK ON THE HOME FARM.

The cold and wet weather is becoming very serious for farmers of arable land. Grass districts may be looking well enough, though even they would do better now with a higher temperature, and no doubt the excess of moisture is in favour of a good crop of hay.

Spring corn is making poor progress; in fact, some fields seem to be progressing backward. Everywhere we hear complaints of the ravages of wireworm, and there has been no chance to use the roller for some time, so the worms pursue their depredations unchecked. Nothing can be done except to roll when possible and wait for warmth to force the young crops out of danger.

Wheats hold their own fairly well considering the wet season, and give much better promise than the Barleys, but there still remains a little weeding to do, as the crops have been too wet to work amongst.

Turnips cannot be got in at all, for the land is so wet that if they were sown they would do no good. All we can do is to possess our souls in patience and hope for a change.

The young Mangold have come up very well, but are at a standstill; a sprinkling of nitrate of soda dredged by hand along the rows of young plants would warm them up and keep them going.

We see farmers trying to get their land ploughed for the Turnip crop, but the horses could not be worse occupied. Surely there is some muck to be got out into hill in a handy situation for carting out and spreading later on. If not, give the poor things a rest.

Potatoes are coming through, and will soon need to be skerried, but not until the land is dry enough, otherwise the horses' feet may do more harm than the skerry will do good. The Iron Age is a capital horse hoe for Potatoes.

The ewes are not clipped yet. We wish they were.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899.	May.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	21	29.947	59.2	54.1	N.	54.2	62.4	52.0	101.8	48.2	0.113.
Monday	22	29.992	51.3	50.8	Calm.	54.2	61.1	48.8	88.7	49.7	0.032.
Tuesday	23	29.989	60.1	54.3	W.	52.8	66.3	44.8	114.9	39.3	0.010.
Wednesday	24	29.704	56.8	52.3	S.	53.2	62.9	49.9	104.4	45.1	0.113.
Thursday	25	29.861	48.9	45.3	N.	53.6	55.8	47.2	94.4	47.9	—
Friday	26	30.113	48.9	43.6	N.	51.6	56.4	36.1	99.2	32.9	—
Saturday	27	30.302	49.1	43.2	N.	50.0	57.9	36.1	113.7	31.4	—
		29.987	53.5	49.1		52.8	60.4	45.0	102.4	42.1	0.268.

REMARKS.

21st.—A little sun in morning, but a gloomy day; drizzle in evening, rain at night.
 22nd.—Gloomy and humid all day, with drizzle and showers till 1.30 P.M.
 23rd.—Much sunshine, but cloudy at times with slight showers; bright night.
 24th.—Generally cloudy, with frequent sprinkles of rain, and heavy rain at 0.30 P.M.; but occasional sunshine.
 25th.—Slight showers early; overcast till 10 A.M., then fair, with frequent faint sunshine.
 26th.—Sunny at times in morning; overcast afternoon; bright night.
 27th.—Sunny early and at times during the day, but a good deal of cloud.
 The early part of the week warmer, the latter part dull and cool, with a trace of frost on the morning of the 27th.—G. J. SYMONS.

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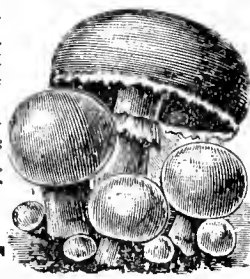
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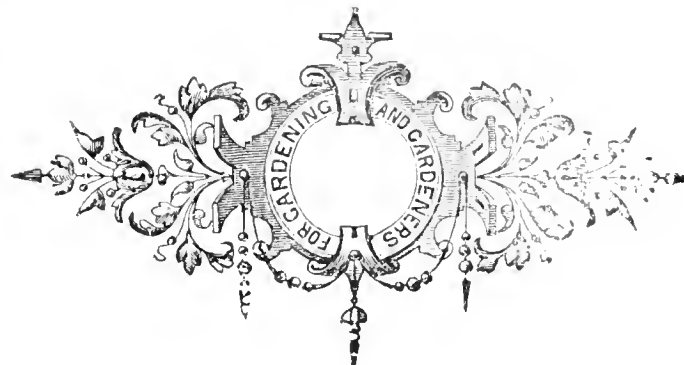
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Journal of Horticulture.

THURSDAY, JUNE 8, 1899.

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WORK FOR HOT WEATHER.

GLORIOUS in its uncertainty is the climate of Britain. A fortnight ago bitter laments were heard on all sides respecting the continuous wet, cold, sunless weather experienced throughout the spring. It seemed as if the long-looked-for sunshine and balmy air would never come; but with the advent of June a magical change dispersed all doubts on the point, and we are now enjoying the brilliant sunshine of an “Indian-like summer.” The writer of the short paragraph (page 428) headed “Too Much Rain” is evidently a prophet, for he concluded with the terse sentence, “There is plenty of time yet for sunshine, and soon we may be wishing for some of these refreshing showers.”

This is exactly the state of affairs in many districts at the present moment. Much planting has recently been done in both flower and kitchen gardens, and a refreshing shower would do an immense amount of good in giving the plants a favourable start, and helping forward vegetation generally. A wet winter or spring was sorely needed to thoroughly moisten the soil and replenish springs, which for a long time after the drought of last summer were very low. On well cultivated land established plants and crops are not likely to suffer much should the present hot weather continue; but with the soil moist beneath, and a few showers to moisten the surface, progress would now be particularly rapid, and the time lost through the backwardness of the spring quickly recovered. The good cultivator is, however, always on the alert to help forward his crops by artificial means when natural ones are for a time withheld. There is abundance of work of this description now, and in proportion as the opportunities to do it are grasped will be the degree of success achieved.

In the flower garden one of the most important matters that needs constant attention is the watering of bedding stock which has been planted during the recent tropical weather. Those who are fortunate enough to have a good supply of water laid on, with hose in abundance to conduct it to any point required, will find the work pleasant and

easy to accomplish. A thorough watering as soon as the planting of each bed is accomplished will put matters right for a day or two, with the exception of a sprinkling to freshen the foliage, given each afternoon or evening; but this must not be confounded with the real operation of watering. I always find it better to water thoroughly twice or thrice a week, than to give only a moderate watering each afternoon, for powerful sunshine acting on soil damp on the surface only quickly draws out the reserved moisture beneath.

Stirring the surface of the soil with a hoe the day after watering has been performed is the best plan to adopt to prevent undue evaporation, as a loose surface cannot crack and form so many channels through which moisture escapes, and warmth too. The use of the hoe provides an inexpensive and natural "mulch," which can be practised on a large scale when mulching with other materials would be out of the question. To those who have extensive flower gardens to manage without the conveniences of an adequate water supply, the present is a trying time, for watering on a large scale with the barrel and water-pot is both a slow and laborious business; yet, perforce, it must be done if satisfactory results are to be obtained. Leaf soil and short grass are, however, usually plentiful enough in private gardens, and they can at this season be put to good use by placing a layer 2 or 3 inches in thickness over all flower beds as soon as they have been watered. The time spent in doing this will be more than counterbalanced by the labour saved in watering. In light soils such plants as Calceolarias and tuberous Begonias can seldom be kept in good condition during hot weather unless a mulch of some kind is given.

Abundance of sunshine, and water intelligently applied, are the main factors in producing a brilliant display in the flower garden, especially when Zonal Pelargoniums are largely employed, and I suspect they always will be, though I hope never again to such an extent as to crowd out the many beautiful plants now so freely used. After a cold wet summer Pelargoniums as bedders generally come in for a fair share of condemnation, but they invariably assert their usefulness again during a hot season.

In the kitchen garden every moment that can be spared is well employed in keeping the hoe going between growing crops; weeds are thus checked in their early stages and the foundation laid for keeping free from them throughout the summer. The man who does this, and has also dug deeply and manured liberally during the winter months, feels secure from ordinary drought, for he knows his crops have a reserve store of food, and ample moisture deep down in the soil; the loose surface may be dust dry, but it performs its great work of conserving moisture for the benefit of vegetation.

For ordinary vegetable crops the attention above indicated is all that can usually be given, but for those grown for exhibition purposes a liberal use of water must be made as well, for no matter how wet the spring may have been, abundance of water given in hot weather shows its result in the form of far greater weight of crop per yard. It is easy to understand the importance of a thorough system of irrigation in tropical countries, for with long hot summers there seems to be practically no limit to the weight of crop an acre of land will produce when we find sunshine and water *ad lib.* at the command of vegetation.

There is, however, one other point which must not be overlooked—viz., the importance of giving additional fertilisers when water is freely used, because the operation results in much plant food being washed into the subsoil. In garden practice this is counteracted by watering with liquid manure, or by applying a coating of natural manure and watering through it. Chemical manures used in conjunction with water are, during hot weather, very rapid in their effect. A sprinkling of guano between the rows of an Onion bed, around Peas or Beans, given just before watering, soon shows that the crops like the treatment, but to apply such fertilisers in hot weather and omit to water immediately after, causes great injury, as many roots are burnt, and top growth quickly shows signs of distress.

A vital point for all to remember in hot weather is, Use water as freely as you like on young crops, but do not forget that as the sunshine and water help to give you a heavy crop, additional fertilisers ought to be used to make up for the large amount the extra produce takes from the soil.—H. DUNKIN.

IN THE TIME OF FLOWERS.

Now is the time when our thoughts find it difficult to choose from among our treasures the one flower which can be called the most beautiful. The Poet's Narcissus is yet with us; the tall and stately Tulips—a noble regiment, fit guardsmen for Flora's throne—are lovely. Chaste or bright Windflowers; blood-red Wallflowers with sweet-scented breath; snowy Candytufts; delicate Rockfools, with the hundred and one flowers of the late May time greet us brightly as we look out upon them now. Well is it that their beauties are great, for they have to hold their own in our eyes with the blossom of the Apple trees, so delightful in their beauty as these words are penned. It is, as the American poet says, a time of "Hourly burst of pretty buds and flowers," in whose presence we would fain remain for long even though the woods and fields would entice us with their many-voiced charms. The lover of Nature has so full a banquet of beauty before him that he cannot partake of all, and must, perforce, only enjoy a few of the many delicacies spread for his acceptance.

If we wander a little way we come on a place where "the wild Marsh Marigold shines like fire in swamps and hollows gray," as Tennyson says; but we need not go so far to see a more glowing picture given by its double sister-form by the Water Lily pool. As one looks upon the blaze of yellow these flowers of the double *Caltha palustris* give, we think of Jean Ingelow's words:—

O, brave Marsh Marybuds, rich and yellow,
Give me your money to hold!

By the margin of the pool, in the marshy soil, a big plant grows with its fresh luscious-looking green leaves thickly studded by the golden buttons which shine so brightly, and look so well when seen mirrored in the placid pool.

If the *Aubrietia*, with its broad spreading sheets of flowers, is beautiful, equally so are the spring Phloxes whose blossoms cover the stones over which they spread so freely. Not all of these have opened as these words are written, but enough have come to show us that our recollections of their beauties in former years have not been too highly coloured, and that those sheets of white, lilac, rosy purple, or centred flowers are as lovely as the pictures which swiftly come at our call from the cells of memory. One would fain bring more often before those who love their gardens the claims of these varieties of *Phlox setacea*, or, more correctly, *P. subulata*, which, on the rocky edgings of the borders or the rock garden slopes look so full of bright beauty.

As one views the Spanish and spreading Squills one's thoughts fly quickly to the azure sheen of the wild Bluebell of England, the Scottish "Craw tae," which, in many aered sheets, is not far away. Bolder and with larger flowers *Scilla campanulata*, the Spanish Squill, is not so graceful, perhaps, in its habit as our own *Scilla nutans*, yet as a garden plant or for wild gardening it may well be prized. Even prettier, I think, is *S. patula* in forms with white, blue, or pale flesh-pink flowers, which look so pretty in low spots in the alpine garden or by the wooded path. The first plants of *S. patula* in my garden were flesh-coloured, but their descendants have sported into white and blue, even prettier than the parent from which they came.

Some of the early Tulips are over, and now their brothers of later habit are in bloom or coming on. Very beautiful as are the English florists' Tulips for ordinary decorative garden effect, seen a little away they are not so valuable as the self-coloured forms. Some of the old Tulips, such as Golden Crown or Golden Eagle, are very beautiful, and superior in brightness to several which have been sold as "Darwin" Tulips. The latter have disappointed numerous growers, and the writer among the number. Many are dull and ineffective, and show no improvement upon the ordinary breeder Tulip. It may be that our British season is less bright than that of the Continent, and less able to bring out the colour of the flowers. However, the writer this season has the opportunity of testing a few varieties of "Darwin" Tulips direct from Messrs. Krelage & Son, of Haarlem. It is well to be frank, and to say that these were sent because of some unfavourable remarks made upon Tulips received, and seen grown elsewhere as "Darwins."

Of the collection one cannot yet speak as a whole, because all are not yet in flower. Of a few I fear I shall have to say that I do not care for them; but there are some of great beauty which well deserve to be grown in our gardens of border flowers. Very fine is *Pride of Haarlem*, with its deep, but bright red flowers. *La Candeur* is a lovely light variety. Exceedingly pretty is *Ed. André*, with its fine bright pink flowers. This Tulip has been much taken notice of by those who have seen it. Another beauty is *Reine Wilhelmina*, the colouring of which is difficult to describe; it may be called terra-cotta. The *Shah* is too dark for my taste; but *Kate Greenaway* is, though dwarf, very pleasing, and will be better still in a few days. One may say of such as have opened that they are vastly superior to the old breeder Tulips, which appear to be often substituted for the true stock, of which the flowers I have now are a specimen. The colours are brighter, and the flowers larger and better. One

must, however, leave for the present the Tulips, and glance at other flowers.

Very beautiful still is *Cytisus præcox*, with its soft creamy flowers, and it is accompanied now by *C. Ardoi*, a lovely little yellow Broom, only some 6 inches or so high. *C. scoparius* Andreanus is also in bloom, and is always a favourite with its crimson and gold flowers. Large plants of this Broom are very fine, and one recalls a specimen in an Irish nursery some 12 feet high, and clothed to the ground with branches. Much pleasure is yet afforded by the Anemones, and now that the varieties of the Wood Anemone are nearly over, one sees with satisfaction the advent of *A. narcissiflora*, of which I spoke in detail a year or two ago. One always enjoys its pretty white flowers.

Gay still is "Gold Dust"—*Alyssum saxatile*—and before it has passed away *A. gemonense* will be in full glory. Less compact, it is more prolonged in its flowering, and is thus of value when the Rock Madwort has gone for the year. The splendid blue of *Gentiana acaulis* is associated with such prettily formed flowers that everyone likes to look upon and into them. The *Gentianella* may have rivals, but it has no equals in others of the race. It is a pity that it does not do well everywhere.

Auriculas, Primroses, Polyanthus are a trio of favourite flowers at their best just as one writes. It is against the future of the stage Auricula that it needs so much care. It is so quaint and pretty that it will be a misfortune if it be true, as some hold, that it will go out of cultivation. In a quiet corner grows the lovely *Trillium grandiflorum*—the Trinity Flower of some—so called, because of the formation of its leaves and flowers. Scattered about in profusion are blue, white, and pink Forget-me-nots, the little yellow *Saxifraga cymbalaria*, and that pretty white weed, the *Claytonia*. There are Welsh Poppies—*Meconopsis cambrica*—in hundreds. They, like all the Poppies, thrive too well here. One would be safe in predicting that this *Meconopsis*, *Papaver pilosum*, *P. orientale*, and the annual Poppies would soon take possession of the garden to the ruin of many less prolific occupants.

As these last lines are penned, one feels that the tale of the garden in May is like that of many months before—one long enough in some respects, but not long enough to tell, as should be told, the beauties the month presents.—S. ARNOTT.

LONDON GARDENS OVER FIFTY YEARS.

No. 9.

SOME folks there are who seem to have a pleasure in forecasting evils that might possibly befall the biggest of all cities. At one time, we are told that London will at last be made desolate by a terrible conflagration; at another, it is suggested a huge tidal wave may submerge all the low-lying districts. The latest idea thrown out is that the greater part of the metropolis rests upon a subterranean lake, indicated by borings, which might be thrown upwards through internal convulsion, with results. Would it do to tap this extensively, and so supply London with water? Anyhow, in the olden time the British capital was the "city of the lake," on a hill between two meres, north and south, into which the Thames widened just there.

Finsbury and Moorgate are names yet standing that remind us of the broad space, of later history, upon which Sedges and Hair Moss grew freely, and our ancestors hunted wild fowl amongst the windmills. Even now, if a portion of this ground is left untouched, plants of the marshes are apt to spring up. When an old author, commenting upon the growth of London, remarked that it would some day be at "Hogsdon,"—i.e., Hoxton—people probably laughed, but the town went northwards with a rush far beyond that village, evidently named from the hogs that ranged its fields. For the Londoners did not then shut up their pigs in sties as a rule; indeed, these animals were occasionally made useful in gardens or cultivated fields to clear off decayed vegetables and various weeds.

Within Finsbury proper we have two conspicuous open spaces, upon which the eye of many a bypasser rests with a feeling of refreshment, even as he hurries by, and which are a boon to the neighbourhood. These are the gardens of Finsbury Square and Crescent, together about nine acres, enclosed a century ago. Farther off, really in "healthy Hornsey," as it has been called, is Finsbury Park, acquired for the public benefit in 1857, an expanse of 115 acres, with pleasant walks amongst flowers and shrubs, also having a part devoted to games, and retaining what was an attraction when the place was Hornsey Wood, a lake, upon whose banks oft sat the patient angler. The tavern on the edge of the wood was a popular resort early in this century, and, well enclosed by the trees, stood old Hornsey Wood House, once much visited too, the last possessors being two ancient dames, who delighted to sit outside under two venerable Oaks at the portal, listening to the hum of bees that made their combs amid the branches, and gossiping to their guests. We might have wished to see the old wood kept intact to this hour, but a park was needed for many thousands in crowded localities not far distant on the south, such as Hoxton and Kingsland.

Kingsland, though we may not realise it now, had a repute amongst the gardeners of Loudon's time. Bassington owned a nursery here, which had been commenced by Fairchild; and at Ball's Pond near was the establishment of Brooks & Co., who employed several travellers to collect exotics. This firm seems to have had a premonition of the importance of the Chrysanthemum, as they sought out varieties of it, while the plant was receiving little attention from gardeners generally. That Hoxton was once famous for its Roses and its fruit is certain. In its neighbourhood lived three notable gardeners of the old school—Ricketts, Pearson, and Darby; the last of these said to be the discoverer of striped Hollies. But fifty years ago Hoxton had ceased to be a village, or to have gardens worth naming; and all round it since houses have multiplied.

Lately the few small spaces which could be secured in the district, such as squares, from being eat walks or rubbish heaps, have been changed into gardens; also some churchyards are now made bright resorts for the living, who cannot possess garden plots of their own. In fact, it is amongst the old burial grounds that the London County Council and the Public Gardens Association have had chiefly to seek land for laying out, where streets have swallowed larger spaces, as in Hoxton, Dalston, Bethnal Green, and suburbs adjacent. St. Mary's Churchyard, Haggerston; St. Leonard's, Shoreditch; St. John's, Hoxton, are good examples of what may be done with a single acre. There was much rejoicing in Mile End when H.R.H. Princess Beatrice opened the garden of Holy Trinity; so, too, in Spitalfields, when Lord Meath performed the like ceremony at the Christchurch ground—a great boon to the most congested district of the metropolis. The churchyard of St. Dunstan's, Stepney, is large, having 7 acres; this was opened as a garden by the Duchess of Leeds in 1887. Still larger is Meath Garden, Bethnal Green, a transformation of what had been a repulsive cemetery. This was opened in 1893 by H.R.H. the Duke of York.

Half a century ago people spoke of Hackney as one of the rural suburbs of London. Some suppose hackney coaches took their name from it, because such vehicles were much used by its residents in their journeys to and from the City. Fields and market gardens extended to more than a thousand acres, besides some extent of marsh. A notable old street, Mare Street, seems to have been in proximity to a mere, or lake, which gave it the appellation. Nobles and citizens of standing had mansions formerly in what has ceased to be a fashionable part of London, and one of these claims a brief mention, because he was a horticulturist of the reign of Queen Bess, and many came to see his grounds at Hackney, where he grew flowers, vegetables, and fruits. This was Lord Zouch, friend of Ben Jonson. One of his experiments, we read, was the transplanting of trees that had attained some size. Pepys tells a droll story of a visit he paid to a friend at Hackney who had several greenhouses—greenhouses, that is, of seventeenth century style, with only side lights. Upon the roof of one of these his friend arranged to store rain water, but its weight was too much for the structure. On Pepys' visit he saw the catastrophe of this roof descending upon the plants and pots within. He would not know Hackney now. Even recently the increase of population is great; since 1851 it has advanced from 54,000 to 213,000.

Mare or Mere Street, already mentioned, is the most memorable of Hackney roads. There was a time when along the greater part stood on one side a fine row of Limes, and on the other a row of Elms. Half of these trees were cut down, in spite of protests, by decree of a local authority, some thirty years since. The absurd reasons were—first, that the falling leaves caused litter about the roads; second, that the trees were conducive to dampness; and third, that they interfered with the free circulation of the air! Few, or no public bodies, one hopes, now entertain objections to the presence of trees in a thoroughfare, but would rather encourage the planting of suitable species. Out of Mere Street runs Loddiges Road eastward, reminding us of a nursery which had a world-wide fame for many years, but which was tending to decay and closure when this Journal came into existence. There is no doubt that Loddiges' nursery owed its origin to John Busch, who commenced it on a plot of land near Well Street, subsequently it was removed to a part of the estate called Barbour's Berne. This man was one of the Dutch gardeners who had been successful in England, but when Catherine II. of Russia invited him to lay out her gardens, Busch left Hackney in 1771, transferring his place to Conrad Loddiges.

Who "Barbour" was nobody knows, but Darnley Road records the fact that Lady Lennox, mother of the ill-fated Darnley of Scotland, lived for awhile at the old mansion on the estate, which included many acres of field and orchard. Half a century ago a beautiful orchard existed on land which Darnley Road crosses. Loddiges' nursery comprised 15 acres, being divided into two parts. After he had inspected the houses, which were arranged according to temperature, a visitor crossed the public road by a bridge to the open ground. The firm had representatives in many countries, who sent home not only rare or new plants, but other objects, such as birds and insects. Its most successful period was the time of peace which

followed the Battle of Waterloo. First the large Palm house and crowded Orchid houses, kept at tropical heat, excited surprise. Then came a succession devoted to Heaths, Cacti, Ferns, and Camellias, of which Loddiges had a grand spring display. In the arboretum the species were arranged along a series of circular paths, on the right side trees or shrubs being placed alphabetically; on the left were Roses and herbaceous plants, the central space showed the American species. When this nursery was closed, many of its plants were removed to Chatsworth, or to the Crystal Palace grounds, just then laying out, Sir Joseph Paxton being an intimate friend of the family.

Certainly, though Hackney has grown largely as a suburb, it is not badly off in the matter of open spaces. Paradise Fields are built over indeed, like Loddiges' nursery, but there remains quite a cluster of commons around, besides a good number of acres of marsh land. There is Well Street Common, 20 acres; the London Fields, 26 acres, and Hackney Downs of 41 acres; close to it is also the expanse of Victoria Park. This is probably seldom visited by people living at a distance, but it contains a great variety of trees and shrubs, mostly in a flourishing condition, with a good sprinkling of flower beds well kept. At Homerton a beautiful bit of scenery was spoilt by the North London Railway, which cut through fields and gardens, especially in the extensive grounds of Wick House, which belonged to Lenev Smith, proprietor of silk mills on Hackney Brook. Towards Upper Clapton some fine views are still obtained, as when we ascend by Mount Pleasant Lane to the terrace on which stands Springfield. Here, looking towards the north-east is a charming view of meadows, water, and distant forest unrivalled near London. One of the older Nurseries, that of Low & Co., will shortly end its connection with Clapton, where it has long been famous for new and choice plants; the present headquarters are at Enfield, about which more hereafter.—J. R. S. C.

IVY-LEAF PELARGONIUMS.

I AM cutting trusses of the best double varieties now, and from the extreme beauty of the flowers, combined with adaptability as decorative plants—features which are as yet comparatively unknown—I am induced to send this note in their favour. The plants are easy of culture, provided their requirements are understood and supplied; the chief point in which beginners are likely to make a mistake being giving too little heat, at least early in the season. My experience with them is that they require to be kept warmer than the single varieties in order to insure plenty of flowers over a lengthened period.

The best time to propagate is the present for strong early flowering plants, and in August for plants to bloom later in the season. I like strong cuttings rather hardened at the base than soft. One cutting is put into a thumb pot filled with light soil, and the pots are placed in a warm pit until a fair number of roots have been made. During the summer months a cold frame suits them well. The attention they require is first to shift them out of the cutting pots when thoroughly well rooted, and putting into 4½ or 5-inch pots. The soil I use is turfy loam enriched with cow manure. The pots are well drained, and in potting the soil is made firm. Then they will require pinching at least twice—the stronger plants before potting, any others after they have become established. About the middle of September the plants are pinched the second time.

An occasional surface dressing of an artificial manure is of much benefit to the plants, and may be applied about once in three weeks from the end of August. The plants should be kept growing throughout the winter months, and if properly managed will require a slight dressing of manure at intervals, as above stated, right on until February, when they are ready to be transferred into 7 or 8-inch pots. A couple of months' further attention to pinching, staking, watering, and keeping the plants in a growing temperature will have secured fine strong plants full of flower. During the summer manure should be applied in weekly dressings, straggling shoots pinched and tied to sticks, and the trusses removed as they open fully, or as wanted.

August cuttings are harder than those which can be had now; moreover, they can be cut much longer, and the foundation of a strong plant is more easily secured. The cuttings root well, several in one 6-inch pot filled with light soil, or they may be put singly into 2½-inch pots and wintered therein. In any case it will be found that the cuttings will root more readily if they are placed under glass—such, for instance, as an early vinery. During the winter do not allow the plants to stagnate in a cold house, but keep them growing. In February pot the stock, using 4 or 5-inch pots, according to the strength of the several plants. If care has been taken to pinch those requiring it during the winter, the plants when potted will be stout and bushy, and will require much the same treatment as already advised for the earliest rooted cuttings. They may either be flowered as small plants in the early summer, or if potted into 7-inch pots will make strong fresh plants for flowering later. The same plants do very well a second year in the same pots, but though perhaps more floriferous the trusses are not so fine as on young plants.

As to sorts, all those we have had during the past year or two have been good. Single varieties are more easily managed, and are more floriferous, but I do not like them so much as the double varieties either for beauty or usefulness. In addition to their adaptability as pot plants, some of them are very suitable for growing in baskets or for drooping over the edge of stages. The stronger growing varieties run very rapidly up pillars when planted out, and are also of value for covering walls.—F.

LIVERPOOL NOTES.

A FEW years ago one would have been taken to task if one had hinted that the Cheshire side of the Mersey would become so thickly populated as at the present time, for the green fields were stretching far and wide, which now are covered with houses.

To keep pace with this the Wallasey District Council has been on the alert as regards recreation grounds, and a recent occasion saw the opening of Vale Park, Liscard, which it small must prove of inestimable benefit to all residents, the work having been done in a thorough manner, and the selection of trees planted a most judicious one. The park includes the Li-card Vale and Woodland estates, and some of the old plantations have been retained. Mr. J. G. Coombs, the Chairman of the Parks Committee, issued invitations to a large number of residents, who thoroughly enjoyed the proceedings, which took the form of a garden party. Mr. Coombs opened the park gates and admitted the public, subsequently addressing those present in support of the Council's action in providing these open spaces for the people.

The total cost of the purchase and work has been £12,230, the Surveyor, Mr. W. H. Travis, with the assistance of the Park Superintendent, Mr. Roeking, and the head gardener, Mr. Burston, being responsible for it.

ASPARAGUS SPRENGERI.

How useful are all the indoor varieties of Asparagus, and how large a part they play in almost every form of floral decoration, those who make it a study readily know. Such forms as *A. plumosus*, *p. nanus*, *deflexus*, and *tenuissimus* have for many years played a useful part, but I venture to assert that the somewhat new variety, *Sprengeri*, will rank for beauty and usefulness with any of the family. As a basket plant it is of the highest importance, the elegant glaucous shoots growing to a length of 7 or 8 feet, and given a moist temperature and a fairly rich compost, the growths are produced in abundance, and when cut for table decorations last much longer than the *Smilax*. Nor is this all, for numberless small growths with which the shoot is studded may be taken here and there and used for bouquets and wreaths with lovely effect.

Speaking of the plant to one of our leading florists, he assured me that it had come to stay. He believed it to be superior to all other varieties, and that already it had been simply invaluable to him, and was more largely used than any other.

THROUGH COUNTRY LANES.

The following bit of word painting, illustrative of the beauties of the suburbs of Liverpool, culled from the "Liverpool Courier," seemed so appropriate that I could not refrain from asking for space to include them in these notes.

"From the coach top you see, for the first time perhaps, how beautiful the world is that lies around Liverpool. Gateacre nestled in the valley, the long green arcades of Alterton—where the trees arch overhead like giant bows—Speke, Childwall, are all at their loveliest now, with that beauty which leaf-time brings. Though the season is so backward the colour in everything has softened and deepened. The Laburnum tassels are breaking into gold, the Lilac is out, and Apple and Pear trees are blossoming safe in deep orchards. Blackbirds are fluting, and the rooks, swarming on the field in farrow, rise in solemn flights at the rush and clatter of the coach and the horn echoing musically down the long green roads. The tiny hedge people get terribly nervous, and seem to think their homes are in danger. Such whirr and swirl of wings, and agitated circlings and dartings above beloved nests, such chatter and whimperings as the coach rolls past."

So says "Rambler," in his notes of May 20th, and I feel sure that other readers besides myself will enjoy, as I did, the perusal of the few intensely natural lines on a subject so near to us all.

AMATEUR GARDENERS' ASSOCIATION.

The effects of the peculiar season through which we have just been passing was apparent at the monthly meeting held in the Common Hall, Hackins Hey, Liverpool, under the chairmanship of Mr. W. Histed, when the exhibits, although of extremely good quality, were few in number. Miss Hunter was the most successful prize-winner, taking the first prize for a lady's spray, composed of pink Ivy-leaf Pelargonium and Fern, Mrs. McGregor being second with a composition of pink Roses, Lily of the Valley, and Asparagus plumosus. Miss Hunter took a prize for three sprays of Violas and second for Pansies. Mr. Cangle was first for Zonal Pelargoniums, and Mr. Turner for Carnations, the blooms of Germania and Uriah Pike being magnificent. The Judges divided the special monthly prize between Mr. Turner and Mr. Drake, the latter showing Cactus blooms set in sprays of *Adiantum gracillimum*, and also awarded certificates. An admirable paper on the cultivation of the Azalea and Gloxinia was read by Mr. Hoskyn, a member of the Association. Votes of thanks to the Chairman and Lecturer were unanimously passed.

THE FRUIT CROP.

There is always a certain amount of speculation in predicting thus early the promise of the year's fruit crop, but one thing is almost certain—viz., that early Pears will be very scarce, the piercing winds and biting frosts of last month playing havoc with the tender blossoms, and the absence of bees owing to the cold must make a big difference to the setting. Trees of shimmering white have all been divested of their load, which lies blackened and ready for the sweeper. Plums seem to be good, but I hope later to be able to send a summary of the crops in the district.—R. P. R.

ANEMONE SYLVESTRIS FLORE-PLENO.

THE many dozens of species and varieties of Anemones that are grown in gardens for various purposes are exceedingly valuable, and afford a rich diversity in colour, form, and time of flowering. The Temple Show brought forth an addition to the list, and one that will certainly meet with wide approbation. This is *A. sylvestris flore-pleno* (fig. 103), which was shown by Messrs. G. Jackman & Son, Woking. As in the well-known type, the habit of the plant is dwarf, and from the green leafage rise on tall footstalks the double pure white flowers. These are about the size of small Pompon Dahlias, and are composed of very numerous narrow petals, which have a green tinge towards the central crown of the flower. The Floral Committee recommended that *A. sylvestris fl.-pl.* should have an award of merit.

CHOISYA TERNATA.

THIS beautiful shrub may be described as an enlarged form of Rue in habit, densely branched and compact, though much freer and bolder in growth. It is an evergreen, leaves opposite, ternate, stalked, bright shining green, full of pellucid dots. Flowers white, sweet-scented, produced in axillary peduncles at the tops of the branches, simple or branched, with bracts at the divisions under the pedicels, which are channelled beneath. The shrub grows to a height of about 6 feet. is a native of Mexico, and was introduced into this country in the year 1825.

Though relatively an old plant, *Choisya ternata* is not often met with in gardens. For many years it was treated as a greenhouse plant, grown in a pot, and not often seen in flower, or very sparsely blossomed. Planted out in a cool conservatory border it charmed everybody by its delicious fragrance, the fine heads of white Jasmine-like flowers, set off by bright green foliage, being singularly lovely. Not many of such examples were, or are now, seen in cool greenhouses or conservatories, but no plant is more appropriate, especially when planted out in a bed of loam, or loam and peat, with a small quantity of leaf mould and sand added, over thorough drainage. It requires abundance of air, and all the light our climate affords, then it does splendidly in a cool or even unheated house, and the flowers surpass, because they can be had by everyone, those of the Orange, and even rival the *Stephanotis* in pureness of white and delicious fragrance.

But the *Choisya* has been requisitioned as a window plant for its beautiful green ternate foliage. It may sometimes be seen struggling for existence in "bays" with a north aspect, and may flower once in a while when given a western or southern exposure. Few are aware of its great intrinsic value for outdoor adornment, and coddle, or rather starve, it in a pot wherein and in present quarters, that of windows, it can never, or very seldom, do more than display half its beauties.

For walls of 6 to 8 feet in height *Choisya ternata* has peculiar fitness. It is, as before stated, evergreen, hence effective at all seasons, but when in flower quite delightful, having that rare essential of pleasing everybody. It grows in any well-drained soil, partially sheltered and relatively dry situation, being quite hardy in the southern counties of England, and even in the Midlands with the protection of a wall facing the south or south-west. In such position it flowers in the early summer months—May to July.

But everybody has neither a cool house nor a suitable wall, though they may have a potted plant struggling to make a show in a window, and it is on behalf of such that I write. Now is the time to plant it outside. It will be accommodated in a border adjoining the cottage, villa, or mansion, on the southern or western side. Turn it out of the pot, plant firmly and not too deeply, about 3 feet from the wall. Water occasionally, but only to prevent flagging, until the roots of the ball get a firm grip on the soil, and then wait the result. Do not be alarmed if the foliage get a little nipped by sharp frosts in winter, for this is only due to the plant's eagerness to show you what it can do—that is, it grows rather freer than is good for it at first, and the growth does not become ripe enough to endure sharp frosts. The spring after planting out there may not be any return, only a charming evergreen shrub, choice, and to some extent rare, but time will bring a rich reward. On May 27th there was a bush in full glory, about 4 feet in height, on the south-west of a villa in Manor Road, St. Albans. The soil is gravelly calcareous loam, over chalk with flints, but the substratum red with oxide of iron—a Cherry and stone fruit land, also just the thing for Hops. The situation is some 400 feet above sea level where the *Choisya* thrives, and charms the inhabitants of the oldest city in the British Empire.

Choisya ternata may be easily propagated by ripened cuttings, which root freely in sand, under a hand-glass, in gentle bottom heat, during spring and early summer. The cuttings should be inserted singly in small pots, and kept moist and duly shaded they will not flinch, but root, and the growth being a flowering one, form the choicest of little plants for decoration when hardened. There is the other plan of growing plants outdoors, getting them up to a flowering stage, then lift carefully, place in pots or tubs, and flower similar to other forced shrubs. Really we want more variety, especially of the sweetest and loveliest of spring and early summer flowering plants, and this is my excuse for writing these notes.—G. ABBEY.

SOME FORGOTTEN GARDENS.

IN this progressive age we seem to trample with an indifference (considering our mental status, it must be unconscious) the memories that link us to the silent past, and forget in our march the loyal work our pioneers have done in the fertile fields of horticulture. Our debt of gratitude to the Spanish Arabs must not be under-estimated, remembering that the western world had yet to learn how to enjoy the beauties Nature had lavished with seemingly reckless profusion, even before she could enter the lists with the dusky Moor, but time has proved her aptitude.

To the Moors we are deeply in debt for the finest fruits that grace our orchards and win encomiums for our gardeners, as well as the products



FIG. 103.—ANEMONE SYLVESTRIS FLORE-PLENO.

that have helped us to take an advanced position when traversing that avenue that leads to success—namely, rice, sugar, and cotton—whilst Spinach and Saffron hail from Spain.

Apart from the natural productivity of the soil, it was the custom in Granada to have orchards, vineyards, and flower gardens in every accessible spot. Some of the leading gardens were so arranged that a regular succession of crops could be insured all the year round, and such an impetus did they give, that to the present day the Orange and Lemon stand as dumb witnesses. The most famous garden—or, rather, the one that lingers in the page of history—was started by Abdurrahman the First at Cordova. Neither money nor brains was spared. These gardens were extensively stocked with the choicest trees that could be collected, celebrated for the rarity of the fruits as well as for fragrance, not to mention it was he who introduced the Peach to us. The imperfect description that we possess, and the ruins which the spoiler has not destroyed, testify that ornamental or landscape gardening had reached an advanced stage, as seen in the winding walks amongst flowering shrubs, the bowers of Roses, and crypt-like grottoes hewn out of stone, as well as cascades hidden by the shade of the mournful Cypress. Their gardeners boasted of the gradual blending of colour in the plots, while from their bedding plants they managed to have a distinctive fragrance.—A. O NEILL.

BLOSSOM BUD FORMATION.

TAKING the four questions propounded in the *Journal of Horticulture* for the week ending May 11th, seriatim, the first—"What is a blossom bud?" is superficially a simple question, although underneath lie Nature's secrets of reproduction. Secrets? Yes, and such as will, probably, never be divulged to the keenest scientific vision. Emerson defines this limit in saying, "All we know of the egg (the embryo) from each successive discovery is another vesicle (cell), and if after five hundred years you get a better observer, or a better glass, he finds within the last observed another. In vegetable and animal tissue it is just alike." A blossom bud, as I take it, is the embryo fruit, as the wood bud is the embryo of woody growth; or, in the animal kingdom, the egg, or other vesicle containing the germ of life is the embryo animal.

"How is it Formed?"—By a change in life of the tree, plant, or other vegetable, arising from, or contingent upon, what Dr. Lindley has termed the age of puberty. The doctor's theory, which is very practical for our purpose, is, that the time of this change depends, in a measure, upon adventitious circumstances, but more upon the idiosyncrasy or constitutional peculiarity of the individual. The latter is, of course, an inherent hereditary power, not liable to change, but capable of being affected in some degree by external influences.

"What Helps and what Hinders its Production?"—Upon this compound question is hinged the door opening to those external influences included in "adventitious circumstances." The age of puberty is, to more or less extent, the age of maturation; such maturation not necessarily implying the completion of growth (as in many annuals), of which there are innumerable examples in both kingdoms of life, showing that reproduction is not the sole end and aim of individual existence. "Adventitious circumstances" are many and varied, comprising both helps and hindrances to natural plans. Those pertinent to our present purpose may be briefly stated as local suitability; checks to gross growth by root-pruning, and judicious pinching and pruning, which matters have lately engaged the attention of writers and readers in the *Journal of Horticulture*. Such are undoubtedly aids to maturation, and consequent fruitfulness, and to health. The laws of health embrace the functions of life, and fruitfulness to the end of reproduction is a primary power in the well-being of the subject.

Question 4 introduces phases which appear to be departures from the normal. Given a healthy tree furnished with well developed fruit buds, it does not seem within the bounds of possibility to change them by any course of treatment into growth buds. That treatment could be employed to render the blossom buds abortive is another matter; in which case the sap would (as I believe is not seldom the case) be diverted to the formation of wood buds upon the spur in proximity to the abortive blossom bud. Probably, and my limited observation tends to this theory, the blossom buds produced from the spur are generally accompanied by obscure, latent wood buds ready for development should the function of the former fail. Superficial observation of this procedure may, of course, give rise to the supposition that a blossom bud (the embryo fruit) can undergo the metamorphosis of conversion into a growth bud.—K.

UNDER the closing paragraphs of "Pinching Fruit Trees," a subject that has recently claimed a prominent notice from several well known contributors of the *Journal*, the questions on the above subject call for deeper thought than did the pinching of fruit trees. This comes under the heading "Blossom Bud Formation," divided into four separated paragraphs.

What is a Blossom Bud?—This requires an education in scientific terms to satisfactorily explain. Briefly, it is the organ containing the various and delicate parts—pistil, stamens, petals, &c.—that go to form pollen grains, whereby the flower becomes fructified, either naturally or by insect aid, and is distinguished from the wood or leaf bud both in formation and purpose.

How is it Formed? is a question not less difficult to explain definitely, since the process of formation extends throughout the autumn and late summer months, slowly developing from one stage to another through the influence of sunshine and rain, and the ebb and flow of sap in the bark channels. There would seem to be much greater activity in the autumn in the growth of the blossom bud, which goes to show that the change in the constitution of the sap has a direct bearing on the formation of fruit buds. The leaf or wood bud is apparent in early summer nestling in the axil of the leafstalk in stone fruits, but not so the fruit bud; and in Apples or Pears it is not easy to decide definitely which are flower buds at such an early date.

It is curious to note what a contrasting difference there is between Peaches and Nectarines that are forced and those which are allowed to make their growth under more natural conditions—in cool houses or in the open. In the latter case the buds assume a plumpness by the

autumn that is seldom witnessed in a forced tree, and they are susceptible to weather changes that do not seem to affect trees that are forced. With a mild winter the buds in a cold house will show more activity in bud with the ventilators fully open, than will those in the early house after several weeks close confinement, accompanied by a little fire heat, and daily syringing of the branches.

What Helps, and what Hinders its Production?—The state of the weather is accountable for much, either in help or hindrance, and so are the means and provisions for attending to the cultural needs of the trees from the spring, when the leaves appear, until their fall in autumn. Extreme drought on the one hand and continuous wet on the other are both hindrances to a certain extent, as also is indifferent root cultivation. Trees whose roots are allowed to penetrate deeply into the cold subsoil make a rampant growth that can seldom be made fruitful, no matter what the conditions of culture may be otherwise. Wall trees that have their roots near the surface, and are neither watered nor mulched with some kind of protective material in times of severe drought, fail to develop healthy buds, as they do when the roots are deeply dug annually and the ground cropped with strong-growing vegetables.

Insect enemies of fruit trees in their varied forms account for some hindrances, especially if they are not promptly dealt with. In the case of Peaches on open walls, where there is no glass coping or other ample protection provided, blistering of the leaves will sometimes assume serious proportions. I have had to remove leaves twice and three times during the early season, almost entirely defoliating the branches for the time. This certainly hinders the production of blossom buds, and seriously weakens the trees. The judicious pinching of the summer shoots is a means for materially extending bud production. If pinching is practised too early in summer it forces lateral growth, which often is too soft and late to form flower buds.

If and in what way a Blossom Bud can be changed into a Growth Bud?—I have often noted in Apples and Pears, which prior to the time of pruning in winter had buds giving every indication and promise of being blossom buds, change the prospect most disappointingly later on when one looked for the expanding flowers. I have noticed, too, that those who persist in shortening strong shoots of either Apples or Pears often get sparse crops, from what I presume to be a conversion of fruit into wood buds? Vines which are unsatisfactory at the root and are not well ripened in their lateral wood will, if hard forced in spring produce tendrils instead of Grapes. Cases have been recorded where Vines which in the first break produced barren laterals have by skilful manipulation changed into fruitful ones the same season by severe pruning, and forcing a second break. Needless to say, this occurred only with early started Vines.

Briefly, "blossom-bud formation" depends largely on the methods of pruning adopted, general cultural attention to both root and branch, and the weather. Neglect the roots in strong soil, and blossoms become scant through over-luxuriance; in poor soil bud formation is hindered through starvation, while rational treatment in both cases results in abundance of healthy buds, which, with favourable weather, is followed by full crops of fruit.—W. S., Wilts.

A GREAT and important subject was opened by the questions in the *Journal* on May 11th, and if only a tithe of the readers express their opinions and relate their experiences fully the Editor would have sufficient "copy" to last for a year or two. Each of the questions would require a long discourse to do it full justice, and much would still be left unsaid. I rather startled a lad recently, who thought he could master the whole art and science of horticulture in six months, by telling him that I was "still learning," and he seemed to think it an appalling state of affairs that a man at my age should be "still learning." I fancy, with regard to the subject started, that this will be the condition of many of your readers, as it is most complex, and requires working out most carefully to arrive at any definite conclusions.

1. *What is a Blossom Bud?*—Theoretically it is a metamorphosed or altered growth bud, in which all the parts—sepals, petals, stamens (anthers), and carpels (pistils), represent a leaf structure converted to a special purpose, either protective or reproductive. We therefore find occasionally all these parts assuming the true leaf-form, colour, and nature. We also find the parts becoming converted into each other; thus stamens may develop into petals, and even carpels will also become petaloid in perfectly double flowers.

2. *How is it Formed?*—All blossom buds originate from the accumulation of substances in the branches or stems, elaborated by leaves mostly as starch rendered soluble and transferable as some form of sugar with probably other matter. In the case of deciduous trees this is partly deposited at the base of the leafstalk, hence it is commonly in the axil of the leaf that both flower and growth buds are formed. Without healthy, well developed leaves, we either get no buds, or they are weakly and imperfect. The bud is, therefore, formed by the leaf, just as in the case of Begonias, Bryophyllum, and some other plants, growth buds are formed, under suitable conditions, on their

margins or cut edges, and as the ovules or young seeds are regarded as buds forming on the margins of carpellary leaves variously infolded in the different systems of placentation (arrangement of the seeds in the ovary).

3, *What Helps, what Hinders its Production?*—The most obvious assistance to blossom bud formation is derived from a check to luxuriant growth, which is chiefly effected by decreasing root vigour. No practice, according to my observation, has greater tendency to promote the formation of blossom buds than careful lifting or judicious root-pruning; but this is influenced by so many conditions, the time when the operation is performed, the age and state of the tree, and subsequent weather, that only a general statement can be made, and perplexing or apparently contradictory cases occasionally arise. There is another condition opposed to the formation of healthy or perfect blossom buds, and that is the extreme of weakness due to some deficiency in the soil. In such cases I have known heavy dressings of natural manures, or phosphates and potash produce a marvellous increase in the number and vigour of blossom buds, but it must be remembered that the trees had already received a great check. The many hindrances to blossom bud formation are vigorous growth, severe branch-pruning, deep rooting, and the use of stimulating manures in naturally fertile soils.

4, *If and in what way a Blossom Bud can be changed into a Growth Bud?*—To this should have been added, Can a growth bud be converted into a blossom bud? Here observers and experimenters have an ample field for investigation, and they may expect to be "still learning" for a long time to come. It is my opinion that in its earliest state a bud is in an undetermined condition, and its development as a blossom or growth bud may be influenced by causes that operate respectively in checking or stimulating the vigour of the tree. As this stage occurs very early in many trees, usually long before the leaf falls, varying in different kinds and even in different individuals, and is influenced by the season, it becomes exceedingly difficult to gauge results. We cannot measure or determine the causes accurately, hence the effects are imperfectly understood. Very early autumn planting is more frequently followed by free flowering the following season than is winter planting, and in the same way young trees that have not been removed for several years in nurseries, more commonly flower abundantly or unduly the first season than those that have had an annual preparation. These ideas I have verified in a general way, but more comparative experience is required.—R. LEWIS CASTLE.

[*A natural question, the omission of which was not accidental. We observe our correspondent is too cautious to answer his own question, but sits on the fence in a mood of contemplation. Mr. Abbey seems to be resting too, and Mr. Picker silently watching.]

LONICERA HILDEBRANDI.

A PLANT of this remarkable giant Honeysuckle is now in flower in the Mexican house at Kew, where it attracts a great amount of attention. Apart from its being the first time that flowers have been produced at Kew, it is interesting from the fact that flowers of this species have only been known to have been produced once before in Europe, that event occurring last summer in the Glasnevin Botanical Garden. The species has been in cultivation at Kew for a number of years, large plants being found in several of the houses. These were raised from seeds which were obtained for Kew by its discoverer, General Sir Henry Collett, from Mr. Hildebrand in Burma. It is stated to be cultivated in Burma as a garden plant, and is found growing wild in the Shan States, but is not very common. In habit it is a very strong growing climber, making shoots in abundance, often a dozen feet or more in length, in a single season. The leaves are pale green, ovate, acuminate, with a membranous margin, and glabrous. They vary greatly in size, some being 7 inches long by 5 inches wide, others only half that size.

The flowers are produced in pairs from the axil of each leaf on the current year's growth. The largest of them are 7 inches long, the tube being about two-thirds of that. They are "chameleon-like" in colour, changing very rapidly. When they first open they are almost white, pink tinges being noticeable here and there. When about twelve hours old the colour begins to change, until at a day old they are pale yellow, the colour continuing to deepen, until at two days they are rich chrome yellow; about the third day the outside of the petals turn a reddish brown.

Altogether the plant is of great interest to both the gardener and botanist. From an horticultural point of view the plant, up to the present, has had one bad point, its shyness of flowering. Otherwise it is a handsome and free-growing climber which is little troubled by insect pests. As far as growth is concerned a wide range of temperature appears to suit it, growing equally well in a cool greenhouse and stove.

The example in the Mexican house at Kew is growing in fairly heavy loam, and the house has a minimum temperature of 50°. The species is said to flower with great freedom in Burma, and if it could be induced to do likewise here, its fragrance and beauty would insure it a foremost place among indoor climbers. A figure of it is in course of preparation for the "Botanical Magazine."—W. D.



RECENT WEATHER IN LONDON.—The heat in London since our last issue went to press has been intense for the time of the year. On each day the sun has been very brilliant, and the nights close and stuffy. There were a few clouds on Sunday and Monday, but they soon passed away. On Tuesday it was duller, but continued very warm, and the same conditions prevailed on Wednesday.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, June 13th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Rock Gardens, Ponds, and Rivulets in Gardens," will be given by Mr. F. W. Meyer at 3 o'clock.

— PRESENTATION TO THE REV. F. D. HORNER, V.M.H.—We learn that on Saturday, May 27th, the members of the Bradford Paxton Society paid a visit to the Tulip garden of the Rev. F. D. Horner, Greta House, Burton-in-Lonsdale. The kindness with which they always have been received, and the respect which is entertained for Mr. Horner, led the members to ask his acceptance of a Smoker's Cabinet. On arrival, the party were welcomed by Mr. and Mrs. Horner, the presentation being made by Mr. A. E. Banney, the President. An inspection of the garden was made, Mr. Horner explaining the evolutions of the florist Tulip.

— DEATH OF MR. J. CRAGG.—It is with regret that I have to record the death, at the age of forty-six, of Mr. John Cragg, late head gardener at Birchfield, Rusholme, Manchester, after an illness of ten days. Those who attended the Manchester Shows a few years ago will remember the splendid Orchids he used to exhibit, and he was also one of the first to show an artistic group of Orchids at the above shows. As a Chrysanthemum grower and judge his skill was high. The deceased enjoyed the confidence and regard of his employers, and his genial presence will be greatly missed by all who had the pleasure of associating with him. He leaves a widow, four sons, and two daughters to mourn his loss.—G. W.

— RHODODENDRON SUNDAYS.—Last and next Sunday are known in Kent as "Rhododendron Sundays," when, according to custom, the Earl of Darnley throws open his beautiful park near Cobham, the undulating walks of which are flanked by high banks of those splendid flowers. Family parties from all this part of Kent make the visit to Cobham Park an annual event, and as it is only some five miles distant from Rochester, or from Gravesend, it is easily accessible for Londoners. Those who journey on foot from Rochester, says Lloyd's News, will be interested in knowing that the lanes they traverse are those along which Mr. Pickwick and his friends set off to drive and ride to Dingley Dell on a certain celebrated occasion, while the "Leather Bottle" at Cobham is the house in which the broken-hearted Tupman meditated suicide over a cold roast round of beef and a tankard of the best ale. Who can ever forget, either, that it was in the street of the village of Cobham that Mr. Pickwick made his wonderful antiquarian discovery?

— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. G. J. Ingram, the energetic Secretary of this Institution, has forwarded to us a copy of the rules and report of the Committee for 1898, and it is a book that is well worthy the perusal of every gardener and person interested in horticulture. Within its pages will be found a list of subscribers, and lengthy though this is, it might well be extended considering the splendid work that the Institution has done in the past, and in anticipation of what will be done in the future. It was for gardeners that the fund was commenced, and it is gardeners who should rally round it now. It is very easy to glean from the list that gardeners as a body are not properly doing their duty—we would not for one moment depreciate the splendid service that has been done by some—and they should awake to the knowledge of the benefits that are derivable from the resources of the Institution, and subscribe little or much according as their circumstances will allow. Let them remember that it is not the one who gives the greatest amount who necessarily derives the greatest benefit. We cannot of course recapitulate all the advantages of the Institution, and would recommend those interested, and who may not yet be subscribers, to write to Mr. Ingram at 175, Victoria Street, Westminster, and we think from the information that will come to them they will see and appreciate the Gardeners' Royal Benevolent Institution, and become yearly subscribers at once.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
May and June.										
Sunday .. 28	N. N. E.	deg. 50.5	deg. 45.3	deg. 60.0	deg. 37.1	ins. —	deg. 51.2	deg. 52.8	deg. 51.9	deg. 28.9
Monday .. 29	N. N. E.	53.5	51.9	63.9	35.8	—	53.1	52.9	51.9	26.5
Tuesday .. 30	S. E.	57.9	51.8	68.1	36.6	—	55.5	53.6	51.9	29.4
Wednesday 31	S. S. W.	61.5	52.6	71.9	39.4	—	56.9	54.5	51.9	32.9
Thursday .. 1	S. E.	70.1	58.0	76.9	46.4	—	59.2	55.5	52.1	37.8
Friday .. 2	S. S. W.	74.2	60.2	80.5	54.6	—	61.6	56.5	52.2	45.0
Saturday .. 3	N. N. E.	61.5	53.1	75.1	50.9	—	62.3	57.7	52.6	40.6
MEANS ..		61.3	53.3	70.9	43.0	Total —	57.1	54.8	52.1	34.4

The weather during the week has been warm and dry.

— **SUSSEX WEATHER.**—The total rainfall at Stonehurst, Ardingly, for the past month was 1.64 inch, being 0.31 inch below the average. The heaviest fall was 0.31 inch on the 15th. Rain fell on nine days. The maximum temperature was 75° on 31st; the minimum 34° on the 5th and 27th. Mean maximum, 53.51°; mean minimum, 43.02°. Mean temperature, 53.51°—the average. An extremely variable month. About the 20th it was cold, wet, and stormy. From the 22nd to 25th it was fine, and the mean temperature was 54°. The following three days gave a mean temperature of 46°, with a cold N.E. wind. The wind changed to S.W. on the 30th, and the 31st gave us the almost tropical mean temperature of 59°. In low lying places Potatoes and Beans have been blackened. On higher ground nothing has suffered, and the fruit crops—Pears, Apples, and small fruits—will be full.—R. I.

— **THE HOT WEATHER.**—The weather over England continues very warm, the highest temperature being still reported in and around London. On Monday morning the shade reading in the metropolis even at eight o'clock, was as high as 69°, and by 10 A.M. the thermometer had risen 10° higher. The maximum temperature, registered about midday, was again 83°, or precisely the same as on Sunday and Friday last, and about 17° above the average for the time of year. In London we have already had four days this month with a maximum reading of 80° or more, an unusual experience in the beginning of June. On Monday afternoon the appearance of the sky was again threatening, but the thundery aspect was not justified by any atmospheric changes in surrounding regions—the barometer being, as a matter of fact, unusually steady. Though dull on Tuesday morning it was oppressively hot, and the shade temperature again reached 83°. Not only in the metropolis, but over nearly the whole of England, there have been now twelve consecutive days without rain. With an abundance of hot sunshine the ground has naturally become very dry, and in many districts a few copious showers would prove beneficial to the crops.—("Daily News.")

— **FRUIT CULTURE.**—How slow we are to improve our methods in relation both to fruit culture and marketing, Mr. G. Bunyard's recent Society of Arts lecture, and the discussion which followed shows. For many years have we been insisting on the same ideas and suggestions, and with what poor effects. It all comes of our faulty educational methods, which are so much devoted to purely academic instruction in elementary schools, rather than giving instruction in the things of common life and common culture. Were our children taught the things in school which relate to their localities and local vocations, and less of worthless matter, what good ere this might have been done. We are indeed blind to allow this sort of thing to go on, and then find in after life what great mistakes have been made. In a fruit-growing county like Kent, for instance, the fullest instruction in the elements of fruit culture, and of the principles of marketing, especially as they have been expounded by Messrs. Assbec, Monro, and others, ought to form a leading part of our school curriculum. Then we should see lads when they left school taking readily to the vocation in which they have been taught. Now they leave school with totally diverse tastes and ideas, they learn to dislike rural life, they have hardly any association with it, and whilst the smartest go to the towns, the duffers remain at home, constituting a race that is stolid, and incapable in after life of improvement. In no department of trade, in no vocation, does it seem more difficult to create active progressive development than it does in the vocation of fruit growing for market.—A. D.

— **TREES.**—The trees serve us, Mr. John Gifford points out in a contemporary, by improving the soil, and by actually making both soil and land as well. They bring from deep layers great quantities of mineral matter, and in their leaves they deposit much of this on the surface, where is collected a mulch of humus of constantly increasing richness. The forests form soil by sending out acid-charged rootlets, which, with the acids of the decaying humus, have a potent effect in disintegrating the rocks.

— **TAR WATER FOR LEAF MINERS.**—Mr. Luckhurst is not happy with his tar water formula. First it was half a gallon of gas tar boiled half an hour in a gallon of water, then 50 gallons of water added = 1 in 100. This was reiterated, and now it is half pound of gas tar to 50 gallons of water = 1 in 1000. That is the correct thing, and was used in England half a century ago for curing mealy bug on Vines. It is wonderful how things travel from England to New Zealand and return again after a lifetime as new.—OBSERVER.

— **"GUERNSEY GROWERS' YEAR BOOK."**—The last issue of the "Guernsey Growers' Association's Year Book" is to hand, and contains a fund of information that fully maintains the Society's right to its motto of mutual help. Many subjects are ably dealt with by various contributors, and though the articles have been compiled mainly for the benefit of the market growers in the Channel Islands, there is much information that could not fail to be of service to growers nearer home. There are tables of freights and ready reckoners that are valuable as helping to save time, as well as other solid matter. The book comprises nearly 200 pages, and can be had for 1s., plus about 3d. for postage, from the Hon. Secretary, Mr. Andrew Marshall, St. Andrew's, Guernsey.

— **HOLLAND IN IRELAND.**—We are informed that early last week the usually tranquil village of Rush, Co. Dublin, was roused from its normal condition by all the bustle and excitement incidental to a Vice-Regal visit. Messrs. Hogg & Robertson, Dublin, were honoured by a command to receive her Excellency the Lady Lieutenant (Countess Cadogan), who, attended by Mr. Algernon Peel, Private Secretary, made an extended inspection of the firm's bulb farm. The Narcissi and early Tulips were of course over, but the May flowering species and Darwin Tulips, Anemones, and Ranunculus were at their best, and the wealth of bloom made a magnificent display. Her Excellency was pleased to express her satisfaction with the visit, and was specially struck with the large and varied collection of late Tulips, which were in splendid health. The firm received instructions to send a large collection of Daffodils and Tulips to Culford Hall Gardens, Bury St. Edmunds, in the autumn. Messrs. Hogg & Robertson's displays of Daffodils and Tulips in London and elsewhere have been much admired this season.

— **BARNSELY AND DISTRICT EXPERIMENTAL SCHOOL OF GARDENING.**—The first lecture under the auspices of the above school took place at the Queen's Hotel, Barnsley, on the evening of the 30th ult. Mr. Wm. Hoey presided, and pointed out the importance of adopting up-to-date methods, also the advantages the school would afford to gardeners generally. The object of the school is to test, increase, and improve the productiveness of garden land, and decrease the cost of production of crops by means of scientific research, and to teach, by means of plain practical object lessons, the art of budding, grafting, and hybridising, and generally to encourage the advancement of the higher branches of horticulture. The lecturer, Mr. Thos. Redington, F.R.H.S., Horticultural Instructor to the Yorkshire College, took for his subject, "The Present Day Need for Practical and Scientific Gardening." He began by showing the present condition of this country, commercially, as compared with some forty years ago, and pointed out that, whereas foreign produce of a horticultural kind was then practically unknown, we were now spending upwards of twenty millions sterling a year upon such imports. This state of things had been brought about mainly through indifference and prejudice—prejudice against improved methods of procedure in the cultivation of fruit and vegetables. He illustrated this by instances drawn from his own experiences, and concluded by urging that no improvement could be looked for until they made up their minds to pay more attention to the facts of advanced practical and scientific knowledge, and to apply the same to their everyday life. The lecture was well attended, and listened to with interest. On the motion of Mr. A. Chappell, seconded by Mr. Winter, a vote of thanks was given to the lecturer. This school is under the management of a Committee representing the California Gardeners' Society, the Barnsley Paxton Society, and the Longcar and Dodworth Road Shaw Trust Gardeners' Committees. Mr. W. Hoey is Chairman, and Mr. C. Hy. Parker, Shaw Lane, is acting as Secretary, *pro tem.*—("Barnsley Chronicle.")

— **RICHMOND HORTICULTURAL SOCIETY.**—The annual exhibition of this society will this year be held in the Old Deer Park on Wednesday, June 28th. The schedule which has been sent us by the Secretary embodies 100 classes, arranged for the benefit of all sections of growers, from the nurseryman to the cottager. For a 100 feet group a sum of £14 in four prizes is offered, while each unsuccessful exhibitor is offered a premium of £1. Six stove and greenhouse plants have £12 allotted to them, while for forty-eight Roses, distinct varieties in trebles, the three prizes amount to £13. In addition to these there are numerous classes in which generous prizes are offered, and it is to be hoped that a brilliant display will be brought together. The Hon. Secretary is Mr. C. R. King, 61 and 62, George Street, Richmond, Surrey. The show will be opened by Sir William and Lady Thyselton Dyer.

— **EREMURUS HIMALAICUS.**—The fine spikes of this beautiful herbaceous plant are now pushing up strongly, and unless severe frosts occur late in the month they will be longer than usual here. Just the tips of the leaves were all that was injured during the recent severe weather, as the crowns were only just pushing through the protective litter. It is a mistake to protect the Eremuri too early. The later they remain dormant the less likely are they to suffer from inclement spring weather. There is no need of covering as long as the sheathing scales cover the leaves when the large crown is pushing through, but as soon as the green tips of the leaves are seen a little loose litter should be placed about them, drawing it away with a fork on bright days and placing it about them again at night. When the litter is removed a mulch of soil and leaf mould should be laid on if it is to spare. When the large spikes are a couple of feet in height they must be staked, or they are apt to be blown over in rough weather. My plan is to push in two stakes 6 feet high at about 4 inches apart, the spikes coming between them and being supported by strands of raffia. This will be found a better plan than tying the spikes to a stake, as the stem is not bound and cannot be crippled.—H. R., *Coldham Hall*.

— **TEMPLE SHOW.**—We were compelled at the last moment, owing to lack of space, to withhold the following reference to the outdoor exhibits from our last issue:—The flower beds outside the tents were decorated for the occasion in a pleasing manner. Messrs. J. Cheal & Sons, Crawley, filled one with choice Conifers, another with Maples and Rhododendrons, and in between was an exhibit of topiary work, the first of its kind that has appeared at a Temple Show for some time. Messrs. Fisher, Son & Sibray, Sheffield, made a grand display with Asters, Ivies, and other foliage plants, with which they covered a large area. Messrs. Thos. Perkins & Sons, Northampton, sent plants of a new Ager, the foliage of which was very effective. Messrs. Jas. Veitch & Sons had a fine collection of Bamboos, conspicuous among which were *Phyllostachys nigra punctata* and *Arundinaria nitida*. Mr. J. Russell sent a few Guelder Roses, and also a good collection of Asters and other foliage plants. Messrs. J. Waterer & Sons, Ltd., Bagshot, set up a good display of hardy Conifers, including many choice varieties, which were very effective.

— **NOTES FROM HAMPTON COURT.**—Visitors to these famous gardens have now the pleasure of seeing the fine collection of florists' Ranunculus, which are flowering profusely. Besides numerous small clumps here and there, there are two large beds, each 15 feet by 12 feet, and holding several hundreds of plants in remarkable variety and of great beauty. These are strangers at Hampton Court, and will be regarded with undoubted admiration. It would be impossible to describe the colours and markings; they are varied and beautiful. Later on two similar large beds will be seen in fine bloom of Spanish Iris, and without doubt these will be most beautiful. Too much praise can hardly be given for the introduction of handsome flowers of this description; as years roll on it is hoped that many others may be introduced. In a bed, planted doubtless temporarily with shrubs out of pots, numerous plants of *Spiraea confusa* are charming. Apart from the beauty of this shrub when gently forced in pots, it is not less so when grown outdoors as an ordinary hardy shrub. In another bed there is a fine show of bold mixed Pansies, from out of which rise white flowered Marguerites. I saw in one of the London parks some days ago a bed of similar Pansies dressed with Solomon's Seal that produced a very charming effect. A far too free use of standard silver variegated Asters has been made in the pleasant inner or private gardens, and, as will be seen in a few years, they will present a tawdry, cockney-died appearance. There are fully thirty or more of them planted where half a dozen would have been ample. Golden Privets as standards, and red leaved *Prunus* are enduring. In some places two Asters and one *Prunus*, or *vice versa*, are planted in triangles 4 feet apart. Such planting, and in such a charming old garden, is enough to drive a lover of Nature to distraction.—A VISITOR.

— **THE WINCHESTER GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—At a meeting held on Monday, May 29th, Mr. Harry Curtis, gardener to W. F. G. Spranger, Esq., J.P., Southampton, gave a most interesting lecture on "Some Hardy Garden Flowers." Mr. Curtis said it was impossible to deal in one evening with hardy flowers as a whole, so he had elected to treat of a few of the most useful, especially those best adapted for flowering in spring, and which would be found suitable for large or small gardens. He dealt with the *Myosotis*, *Aubrietias*, Pansies, Wallflowers, Hollyhocks, Delphiniums, Antirrhinums, and the *Helleborus* in detail, describing in each case the different varieties in cultivation, and pointing out those of improved form and colour. He advised in every case but the last named to grow the plants from seed, procuring the best possible strains, as being the best and cheapest method of securing a large number, especially for spring bedding. Cultural directions followed for the kinds named, and thus the lecture was of practical value to many young gardeners, the present being the time to prepare for next spring's display. There was a brief discussion, and a number of questions were satisfactorily replied to, after which a vote of thanks was accorded to Mr. Curtis, who exhibited a fine assortment of hardy flowers.

— **MARRIAGE OF SIR PETER WALKER, Bt., OF OSMASTON MANOR.**—On the occasion of Sir Peter Walker's marriage to Miss Ethel Okeover, which was solemnised on May 30th, the decoration of the church was entrusted to the able hands of Mr. Bardney, F.R.H.S., head gardener at Osmaston Manor. Near the entrance, and on either side of the crimson-carpeted walk, two magnificent Palms were placed. These were blown over a few minutes prior to the ceremony, but it was not long before they once more reared their stately heads, carrying one's thoughts to the luxuriant foliage of tropical climes. Under the noonday sun this could be forgiven. Turning again to the sacred edifice, lovely Pansies in beds of moss lined the porch, and the interior was a study in delicate colouring, the various flowers and Ferns having been arranged with the perception of a true artist. Lilies and Palms embellished the font, and the windows were beautified with Lilies of the Valley and *Spiraea*, Arum Lilies being also employed in the treatment of the altar window. The screen was decorated with clusters of Lilies and Lilies of the Valley, backed by sprays of Asparagus Fern, and around the altar stately Palms towered above tasteful groupings of Rhododendrons and Lilies. Variegated creepers were entwined around the altar rails, Lilies of the Valley reposing at the foot in mossy beds, the whole effect being of a charming description. The decorations at the Hall were also of a noteworthy character. The drawing-room and the entrance were nicely decked with Lilies of the Valley and Arum Lilies, and wherever flowers were arranged they were used to the best advantage, the decorations being greatly admired. Lilies of the Valley, white Roses and Asparagus Fern, graced the tables at the wedding breakfast.—("Ashbourne News.")

— **THE ASHFORD VINERIES, COBHAM, SURREY.**—I looked in on Mr. Smith, the manager of this extensive range of glass houses, to see how the 11,000 Strawberry plants layered last summer direct into the fruiting pots had turned out. Not a few growers object for various reasons to this method, preferring to layer into small pots first. Great numbers of the plants had fruited and were turned outside. Many others were in full fruit. In six huge spans, 150 feet long, there were seven or eight rows standing on the floor down the centre fruiting finely, even in such a difficult position. But the fruits were as fine and as well coloured there as on the shelves. Some were in more favourable positions, but about 150 lbs. had been gathered and marketed in five days, evidence of the sort of crop that was being produced. In these houses Gros Colman Vines were covering the roofs two-thirds up the rafters, thus showing how far from the light the plants were. In some 160 feet long houses that have been during the past winter planted with Peaches and Nectarines, Tomatoes being just got out between these trees, there were planted out as lifted from the open ground, all down the centre of each house, several rows of plants just blooming or setting fruit. These would give the latest inside fruits, as the houses are quite unheated. Under any circumstances outdoor Strawberries cannot be very early, and much of the early expanded bloom has been cut with frost. Several thousands of young plants, chiefly Royal Sovereign, have been put out to produce early runners for layering. I could but notice that whilst nearly all the vineries run north and south, one large span running east and west seemed to give the best results, especially on the south side. No doubt a far greater amount of sunlight and warmth is thus obtained than is the case in spans of the other aspects. Arums here are grown in immense quantities, and thrive wonderfully well. Next autumn the Grapes will be worth going miles to see.—WANDERER.



CYPRIPEDIUM MACROCHILUM GIGANTEUM.

At the Drill Hall on the 16th ult. Messrs. J. Veitch & Sons, Ltd., staged a singularly beautiful, and at the same time remarkable variety of *C. macrochilum giganteum* carrying three flowers, one of which was abnormal, as shown in the illustration (fig. 104). The flower in question had two upper sepals, these descending on each side of the pouch, the result of the division of the customary dorsal. This break did not result in disfigurement or detract in the slightest degree, but distinctly enhanced the beauty of the flower. There was, too, in addition to the two long tail-like petals, a central petal depending gracefully in front of the pouch, and of equal length with the others. These, owing to their great length, have had to be curled upwards by our artist to show them entire. The well developed pouch was normal and of handsome form. The parents of this plant were *C. grande* and *C. caudatum* Lindenii. It is a matter for regret that all the flowers on the plant were not of this type, which is well worthy of perpetuation if such be possible.

CATTLEYA MOSSIÆ BEAUTY OF BUSH HILL.

The average quality of the Orchids at the recent Temple Show was comparatively high, but those of extraordinary merit were not particularly numerous. Of those that attracted most attention one of the chief was *Cattleya Mossiæ* Beauty of Bush Hill, which was exhibited by Messrs. H. Low & Co., and is represented by the woodcut (fig. 105). It is a strikingly handsome flower, and the reticulation over almost the whole surface makes it very distinct. The prevailing colour in the sepals and petals is delicate rose purple, with reticulations of white. The splendid lip is crimson in the centre lobe, with yellow side lobes, and a crimson veined throat. It was in every way worthy of the first-class certificate that was recommended by the Orchid Committee of the Royal Horticultural Society.

ONCIDIUM CARTHAGINENSE.

THOUGH the individual flowers of this species are small, they are produced on branching racemes that make a pretty show for many weeks. The plant has no pseudo-bulbs, the spikes springing from the base of the large spotted leaves, and growing a couple of yards or more in length. The flowers are white spotted with rose, but very variable, as may be expected by the species occurring over so large a tract of country in a wild state.

ODONTOGLOSSUM INSLEAYI SPLENDENS.

This is without doubt one of the most beautiful and showy of *Odontoglossums*, but the true form is much rarer than is usually supposed, some dealers labelling good forms of the type as *splendens*. The latter, when true, is quite distinct in having no trace of the reddish-brown spotting on the sepals and petals, but a very broad marginal band of crimson spots to the lip. It is not by any means constant as regards flowering, some plants throwing up their spikes in autumn, others in winter and spring. It thrives well in the cool house, treated as for *O. grande*, with rather large pots and a well-drained rough compost.—H. R. R.

LÆLIO-CATTLEYA HIGHBURYENSIS.

THIS is a beautiful hybrid raised in the collection of the Right Hon. J. Chamberlain, from whose seat it takes its name. It is a cross between *Lælia cinnabarina* and *Cattleya Lawrenceana*, and there appears to be a great difference in the various seedlings raised, which perhaps is only to be expected from two plants with such diverse characters as these. The best varieties are very pleasing, as the clear yellow ground, heavily suffused with bright rosy purple, of the sepals and petals, and the bright crimson-purple lip, are most striking. It will succeed under the same treatment as either parent. On account of its beautiful colour it is worth attention, and when mixed with *Cattleyas* of the *labata* section, such as *C. Mossiæ* or *C. Mendeli*, is very telling.

LEPTOTES BICOLOR.

A plant of easy culture, which is most useful where buttonhole bouquets are in demand, is *Leptotes bicolor*, as its white flowers, with a rosy streak in the lip, are very charming. It thrives well in small pans suspended close to the glass in an ordinary intermediate house; in fact, I have seen nice plants grown in a warm greenhouse. The plant is of small habit with terete leaves or bulbs, and when in active growth should be well supplied with water; but when at rest greater care must be taken, and no more than is really necessary should be applied, as excess favours decay. The usual Orchid compost answers its requirements.

CYPRIPEDIUM CALLOSUM SANDERÆ.

This most beautiful albino is perhaps more sought after by *Cypripedium* lovers than any existing variety, and it is no doubt a great acquisition to those who are fortunate enough to possess a plant. It is easily distinguished from the typical *C. callosum* by its much lighter markings or reticulations on the foliage. The plant is a good grower in a warm *Cypripedium* house potted in equal portions of peat

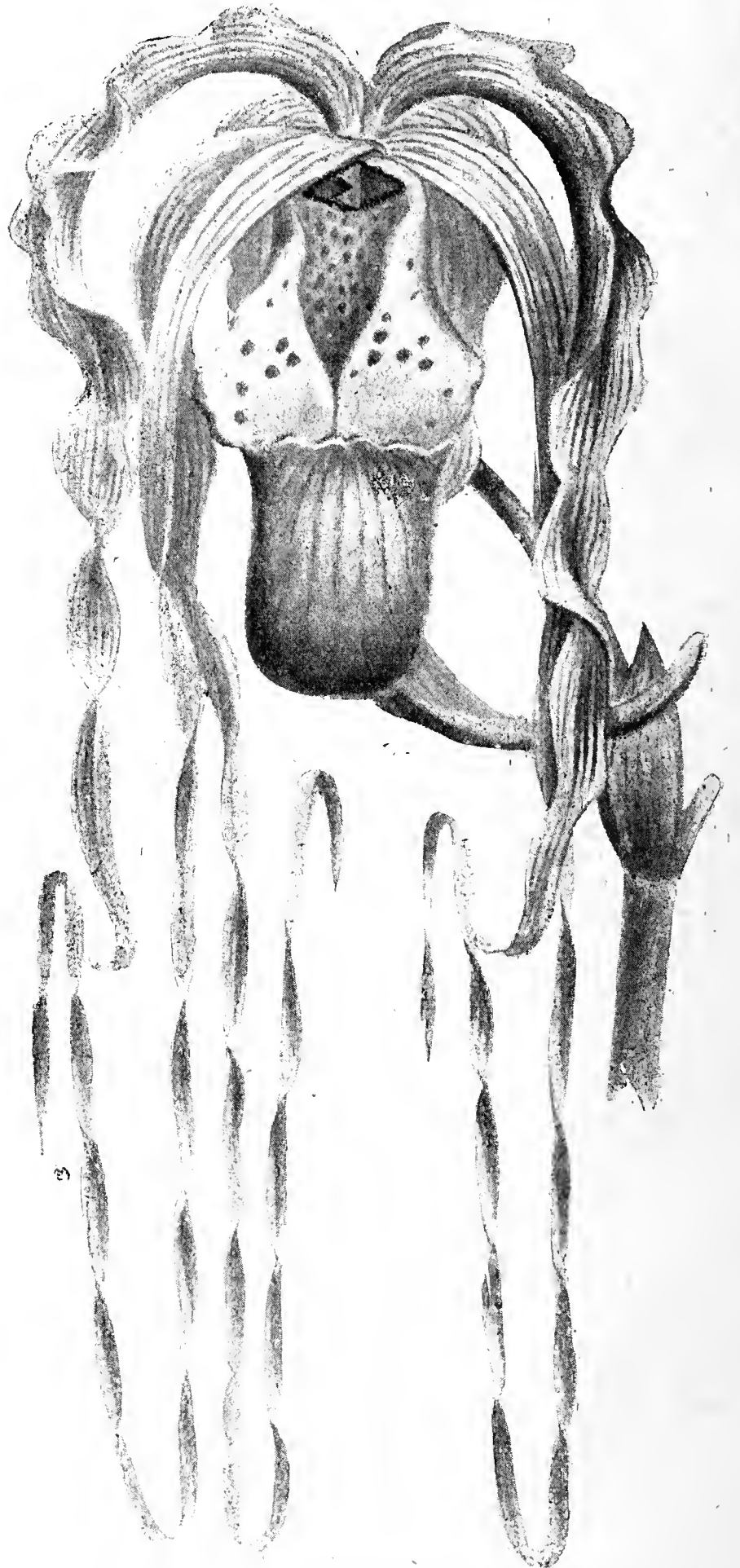


FIG. 104.—CYPRIPEDIUM MACROCHILUM GIGANTEUM.

and moss. Thrips should be carefully guarded against, as they mark and permanently injure its delicate foliage, which is not only a great eyesore but also very weakening to the plant. It is at the present time unfolding its lovely green and white flowers, and is indeed a gem, comparable only with the charming *Cypripedium Lawrenceanum* Hyeanaum, which I find is not quite so vigorous. Great care must be taken in applying water, especially in the dull winter months; they will both succeed under the same conditions.—J. BARKER, *Hessle*.

HYDRANGEAS.

DURING May and June few pot plants produce a more imposing effect than Hydrangeas. Hortensis seems to be the favourite variety, and it is grown in immense quantities by market men. All who see them admire the beautiful little specimens, each carrying a huge flower head, which find their way to the markets, where they command a ready sale. Few plants are more easily cultivated when the right method is pursued; yet in private gardens generally they do not appear to be grown in anything like the numbers they should, considering their great usefulness. At Barford Hill, near Warwick, Mr. R. Jones grows large numbers of them splendidly, as he finds them of great service for decorative purposes.

As a hardy border plant also Hydrangeas are exceedingly effective, and I know of one Kentish garden where they form a great feature during the summer months. Those who happen to have a few old plants growing in pots or in the open border should endeavour to raise a stock of young ones, as I consider it is in a young state that they are the most useful.

Early in August is a good time to begin the work of propagation. I select strong tops, and leave two joints to each. These are inserted in a mixture of good loam and leaf soil, pressed very firmly into 3-inch pots. The cuttings ought to be inserted deeply, so that the leafstalks of the large leaves are covered with soil; this is the first step towards securing dwarf sturdy plants. Every cutting may be relied upon to root if placed in a cold frame and kept close, shaded, and well syringed, admitting a little air as soon as signs of growth are apparent. When roots are plentiful admit air freely, and eventually remove the lights to get the growth firm and ripe, as it is important to prevent growth being made during the autumn; the aim should rather be to secure a plump bud, and keep it dormant till the spring. This object may be accomplished by leaving the plants fully exposed till the first week in October, then removing them to a cool house, which only receives sufficient fire heat to keep out frost, and throughout the winter keeping the plants dry at the roots, giving just enough water to keep the leaves from falling.

During February commence to give more water, and when the plants are growing freely place in their flowering pots—5 or 6-inch, using a compost of three parts good loam, and one of fresh stable manure passed through a half-inch sieve. Pot very firmly, and sink the plants quite up to the first pair of leaves, in order to secure a dwarf sturdy habit. Subsequent details of culture are simple enough. It is in the management up to this stage that some growers fail. If a number of plants are wanted in flower early, grow them in gentle heat in a light house from the time of the final potting till the flower bracts appear, then remove to an ordinary greenhouse temperature, as the flowers come pale in colour, instead of a delicate pink, if kept in heat while they are expanding. Whenever the weather is bright and warm syringe thoroughly daily, to promote healthy growth and keep green aphids at bay. From the time the flower bracts are just visible until they are fully expanded regular feeding should be given in the form of liquid manure, and an occasional top-dressing with some good chemical fertiliser. This is an important point to observe, in order to produce large individual "pips" and "bracts."

If Hydrangeas are grown in soil highly impregnated with iron the flowers will assume a peculiar bluish tint, and some years ago I accomplished the same result by mixing iron filings from a blacksmith's shop with the potting soil. The beautiful pink colour is, I think, to be preferred to the blue, but nevertheless it is interesting to be able to produce both shades of colour from the same variety of Hydrangeas. Dr. Hogg, with its distinctly variegated leaves, is worth growing in limited numbers, but as the flowers are not so imposing as those of hortensis they do not sell so readily in the markets. *Paniculata grandiflora* is a superb variety, of which, both for growing in pots and for shrubberies, cut-back plants make beautiful specimens.

In private gardens, where large conservatories have to be kept gay during the summer months, *paniculata grandiflora* should be grown into large specimens by shifting the plants annually till they occupy 12 or 14-inch pots, then by feeding freely grand specimens, carrying from eighteen to two dozen flowers may be grown in a few years. Two-year-old plants of hortensis are also very attractive. An excellent method to pursue to have them in good condition is the following. As soon as the young plants have finished flowering, cut them down to within half an inch of the soil; two or three growths will

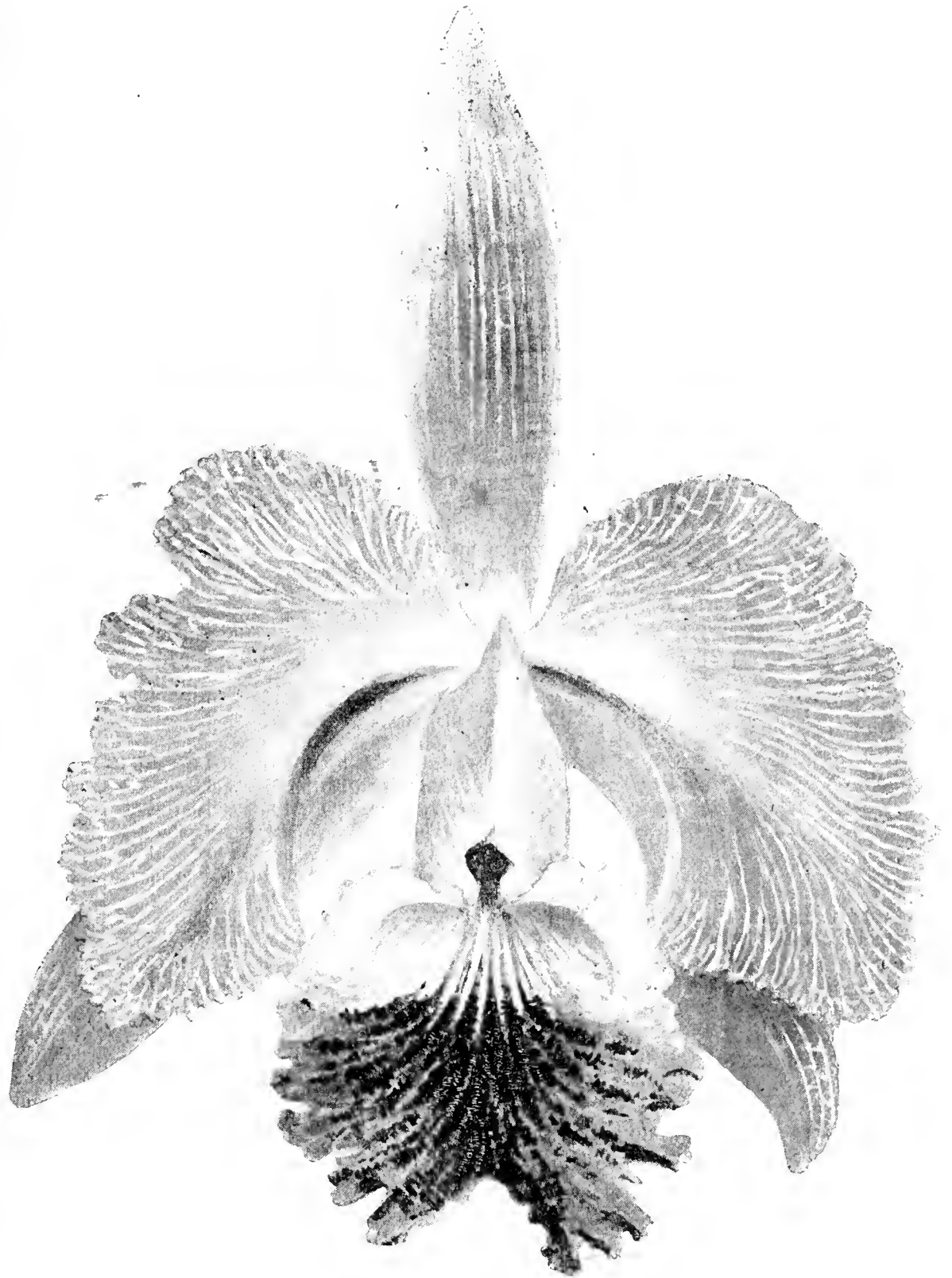


FIG. 105.—CATTLEYA MOSSIAE BEAUTY OF BUSH HILL.

then come; when these are growing freely turn them out of the pots, reduce the ball, and replace into pots of the same size, grow in the open air till autumn, keep cool during the winter, and place in 7 or 8-inch pots during February or March. Three gigantic heads may then be produced on a single plant. *H. hortensis* is a profitable plant if grown well, as each one requires little space; they sell readily, and do not require much fire heat.—H. DUNKIN.

FORSYTHIAS.—These are very pretty shrubs, quickly and easily grown, and flowering early in the season. The greenish yellow flowers look very pretty when the bushes are planted near some of the better varieties of *Ribes sanguineum*. The Forsythias open first, but are still fresh when the *Ribes* flowers. Although thriving in a way on almost any class of soil, the Forsythias are worth a good soil and situation, and where the former has been deeply stirred and the plants are well established, long Willow-like shoots are made that are wreathed with flowers in spring.—H.

DRIBLETS FROM DUBLIN.

A CORRESPONDENT expresses the hope that space may be afforded for the following paragraphs; it is readily found, and Dublin pars may dribble again.

THE ROYAL HORTICULTURAL SOCIETY OF IRELAND ROSE SHOW.

The summer show of the above Society will be held in Merrion Square on Thursday, the 29th of June, and promises to be a great success. Their Excellencies the Lord Lieutenant and Countess Cadogan have accepted the invitation of the Council to visit the Show. The prizes offered for competition are fairly numerous; the following is a list of the principal ones:—Messrs. Dickson & Son, Newtownards, for a stand of thirty-six Roses, a silver plate, value £25. Offered for a stand of Begonias by Messrs. Hartland, Cork, a challenge cup, value 6 sovereigns. For a stand of herbaceous plants, cut blooms, twenty-four, a silver challenge cup, value £25. Presented by Major Donville, J.P., Loughlinstown, a challenge plate, value 10 sovereigns, for a stand of twenty-four bunches of Carnations or Picotees; also a silver cup, value £5, presented by Mr. Watson, Clontarf, for a stand of twelve bunches of Carnations. Edmund Johnson, Ltd., Dublin, present a silver challenge cup for a stand of seventy-two Roses, cut blooms, thirty-six varieties, open to nurserymen only. Messrs. Kelway, Langport, offer a silver-gilt medal for a collection of cut flowers. There are forty-five classes in all to be competed for, and in addition there are three money prizes, given by the Society, in each class. Intending exhibitors must remember that all entry forms must be lodged with the Secretary (W. H. Hillyard, Esq.) by the morning of the 23rd inst.

DUBLIN NATURALIST FIELD CLUB.

The second excursion of the members of the above club took place on the 27th of May to Ireland's Eye, under the direction of the Honorary Treasurer, H. R. G. Cuthbert, Esq., and was well represented. Twenty-eight members and their friends attended; they left Amiens Street Station by the 1.55 P.M. train for Howth. The party embarked in boats at the West Pier, Howth, and in less than half an hour reached the object of their attention. One boat was retained by the party during the afternoon for dredging, but the major portion of the company had a botanical trend and spent an enjoyable afternoon in examining the features of the island; the principal specimens which were in greatest abundance was the Bluebell and Vernal Squill. At six o'clock tea was served, and the party returned to town by the evening train.

DUBLIN WEATHER.

The hearts of gardeners and farmers are elated by the spell of splendid weather we are favoured with, and the heavy rainfall of the previous fortnight has well moistened the ground; the pastures, nearly bare a fortnight ago, are now covered with a wealth of verdure, and recall to our mind the act of some magic wand. The conditions for successful Turnip sowing are probably now the best with a glorious sunshine overhead and an active germination, which should help the young shoots to baffle an attack of the destructive Turnip fly. Orchard growers are storing a large quantity of empties to meet the expected luxuriant crops. Our public gardens are looking well in their foliage and blossoms, and if favourable weather continue there will be ample scope for the reflective to indulge in speculations of the beautiful, and admirers to lovingly linger over the pleasant but fleeting joys of life.

PEACHES AND NECTARINES AS STANDARDS.

IN a neighbouring garden is a small house filled with Peach and Nectarine trees planted in a central border and trained as short standards with free heads. This has a remarkably pretty effect when the trees are in flower, and, what is more important, the amount of fruit produced is very large.

I am personally of opinion that more fruit can be grown in this way than from trees trained in the usual way under the glass, while a much more equal distribution of light is insured than when the trees are grown on the cross-trellis principle. Obtain small trees and plant early in the season just as the leaves are turning in firm borders prepared in the usual way. To get well-balanced heads a good deal of care is required in disbudding during the first few years, also attention to stopping strong shoots and judicious management of sub-laterals.

The first year the trees must be allowed to make all the growth they will, always provided that it is firm and well ripened, and that due regard is had to the balancing of the trees, so to speak, not allowing the upper shoots to grow away at the expense of those near the stem. A light or heavy crop the next season, according as the trees are weak or vigorous, should insure their well-being and prevent any need of root-pruning, which is in many cases a makeshift practice easily preventable.

—H. R.

OUR GARDENS.*

UNDER the above comprehensive title, the Dean of Rochester has written, as might be expected, a book that is sure to be widely read by lovers of gardening. That is well, but it would be better if the still larger community who are only more or less interested in gardens would read and digest what is so agreeably and often humorously contained in its pages. There is a refreshing frankness about the book that almost goes to show that the author would divide our population into three great classes:—1, Those who really and truly love gardens and flowers and derive inspiration from them, making their own lives and the lives of others the happier; 2, those who think they are devoted to gardens, but know little about them, and are really more devoted to themselves; 3, those whose minds are sealed against the appreciation of influences beautiful, pure and good that emanate from gardens when the spirit is attuned to the pitch of receptivity. The Dean does not tell us that he would actually so separate the great mass of humanity, but he does most clearly indicate his strong hope that all would love gardens with the same intensity that he does, and learn wholesome lessons from the great book of Nature that has afforded him solace in his journey through life.

No one knows better than the learned and talented author of the admirably produced volume before us that the first essential of a book to render it acceptable to the constituency to which it appeals is that of readableness. An author may write with the utmost precision, revise with scrupulous accuracy, and teach the soundest of doctrine, but if the style is of the stiff, formal, dry-as-dust character the pages will only be read with pleasure by a comparative few, and these probably the least in need of the matter imparted. Dean Hole has the aptitude to a larger degree than have most men for making people read. It is a great gift or acquirement, and when, as in this case, words of wisdom, born of long experience, are set forth in pleasing association; when wholesome thoughts and good suggestions are woven into sentences which otherwise would be of a plain matter of fact character; and when a point is illustrated by light or amusing anecdote, the reader is carried along to the end, and is ready to tell his friends of the pleasure enjoyed, while he has imbibed something of the author's earnestness and knowledge by the way. The work under notice contains sixteen chapters, and certainly the best form of representation will be by taking a few extracts from some of them.

ENJOYMENTS OF A GARDEN.

This is the opening chapter, and the following are the opening words:—

"I asked a schoolboy, in the sweet summertime, 'what he thought a garden was for?' and he said 'Strawberries.' His younger sister suggested 'croquet,' and the elder 'garden parties.' The brother from Oxford made a prompt declaration in favour of 'lawn tennis and cigarettes,' but he was rebuked by a solemn senior, who wore spectacles, and more back hair than is usual with males, and was told that 'a garden was designed for botanical research and for the classification of plants.' He was about to demonstrate the differences between the Acoty- and the Monocoty-ledonous divisions, when the collegian remembered an engagement elsewhere. A capacious gentleman informed me that nothing in horticulture touched him so sensibly as Green Peas and new Potatoes, and he spoke with so much cheerful candour that I could not be angry; but my indignation was roused by a morose millionaire when he declared that of all his expenses he grudged most the outlay on his confounded garden." This we can quite believe, and more congenial is another experience. "Not long ago I paid a visit to my friend, Frank Goodhart (*nom de plume*, but an accurate description of the man), who has a small but charming garden some twenty miles out of London, wherein, before he leaves home for his daily work in a Government office, and when he returns from town, he spends his leisure time. Here I found him late on a summer's eve, and a healthier, happier, hotter, or dirtier person, I do not remember to have met in the society to which he belongs. As for his apparel, I was constrained to state that I could not have believed that a man of his ancient lineage and liberal education would have robbed a scarecrow were I not positively convinced in my own mind that I had seen his jacket on duty. He only replied with a peremptory direction that I was to 'catch hold' of two huge watering-cans, fill them from a tank some 50 yards away, and bring them back *toute suite*. For an hour I wobbled up and down his walks between these ponderous utensils, until the dressing-bell rang, and my friend, having made himself a C.B., resumed his ordinary aspect as an English gentleman."

IGNORANCE.

Under this heading we find sentences that the truth of which is, unfortunately, beyond question:—"An immense majority of those who possess large gardens are the passive slaves of their gardeners, incapable of giving directions, afraid to suggest them, lest they should expose their ignorance. The peer, the baronet, the squire, is his own Master of the Horse, and can give orders to his stud-groom with all the confidence of knowledge and with all the dignity of power; he knows the pedigree of his thoroughbreds, the specialities of every steed which he rides or drives. In his presence the head gamekeeper, elsewhere a man of arrogant

* J. M. Dent & Co., Aldine House, Bedford Street, London.

demeanour, enriched by the 'tips' and flattered by the familiarity of the gunners, makes the meek obeisance of true respect to his employer, who can marshal a troop of beaters, or break a retriever, or bring down a rocketeer, as well as he can; but he stands before his gardener speechless—cannot remember whether he was instructed by his wife to insist on more flowers for the room or more room for the flowers, and dare not fulfil his promise to the farm-bailiff to reduce the extravagant amount of manure which is demanded for the garden."

PIONEERS AND PROGRESS.

In these chapters we have interesting historical matter dealing with the initiation of gardens and the advancement of gardening. The Romans, we are told, were the first gardeners in Britain, but growers of vegetables only, not flowers. "They were glad, as some of our magnates now, to defray part of the labourer's wages from the results of his toil. Their success was in proportion to their zeal, and was esteemed to be of such honourable merit and distinction, that Cicero, Fabius, Lentulus, and Piso derived their appellations from their skilful treatment of the Vetch, the Bean, the Lentil, and the Pea." We are then reminded of the arrival of Augustine "not with the shout of battle, the fury of the oppressor, and the clash of arms, but with psalms and hymns and spiritual songs, with prayers of penitence, with promises of pardon, with the offer of eternal peace. There was neither sword nor spear—a simple cross and a message from the Crucified, 'Come unto Me, all ye that travail and are heavy laden, and I will give you rest.'" Ecclesiastics were for long the chief farmers and gardeners, in connection with monasteries; eventually they grew flowers, but "almost exclusively for church decoration, for their altars and shrines, for marriages, for the graves of the departed. Sometimes the priests wore floral garlands, and it is on record that at the consecration of a bishop at St. Paul's Cathedral in 1405, the canons walked in procession crowned with Roses. It is still the custom, when the judges pay their annual visit to St. Paul's, for the canons to carry bouquets in their hands, but a similar embellishment of the head would bring all London to see. Nevertheless this ancient coronation might be suggestive and helpful to some gay young ritualist, yearning to irritate the Protestant mind, and a garland of Sunflowers or a wreath of Dahlias could hardly fail to succeed." In the ancient gardens topiary work, or clipping evergreens into fantastic shapes, receives a strong rebuke in "the mistakes of the Creator were to be rectified by the gardener's shears." Bridgeman, we are informed, was the inventor of the sunk fence, and his successor, Kent, is honoured as Field Marshal of English landscape gardening, of which the chief modern exponent was Robert Marnock.

THE FORMATION OF A GARDEN.

Excellent hints are imparted in this chapter. It is said on formation work "Nature must really be put 'in form.' You may rectify, arrange, develop, or, alas! you may disfigure and destroy; but if you would win the approbation of her smile, you will never think to thwart her, and only to alter or assist, as she may teach you; ever listening for her instructions, and obeying the intimations which she gives. I have watched with great interest attempts to improve Nature. I remember an under gardener who carved flowers with his pocket knife out of Turnips, chiefly the Ranunculus, the Camellia, and the Tulip, and coloured them with stripes and spots of the most gorgeous hues; and I recall a day when, passing by the potting-shed in which he was exhibiting his splendid achievements to a friend, I heard him say, 'They whacks natur—don't they, Dobbs?' And Dobbs replied, 'They whacks her ea-sy.'"

COMPONENT PARTS OF A GARDEN.

In references to climbing plants, of which the Dean gives a good selection, he describes Ampelopsis Veitchii as "the greatest of the many treasures which Mr. Veitch has introduced into this country, because its enjoyment is not restricted to the rich, but is within the means of all who desire it." On the subject of lawns we cite, "There should be in front of every home a piece of green grass, as spacious as the means permit, well mown, well rolled, kept free from worm and weed. 'The lawn,' writes Mr. Robinson, 'is the heart of the garden, and the happiest thing that is in it.' Flowers may come, and leaves may go, the lawn goes on for ever. It refreshes the spirit through the eye, which never tires. We wander all over the world in search of things pleasant to the eye; we find them here and there; but nothing delights us more than the green fields and the green lawns, which are only to be seen at home." The subject closes with an amusing anecdote. "A gardener, not far from Rochester, having obtained through the kind influence of his master a more lucrative appointment at a lunatic asylum, came back after a year's absence to visit his benefactor, and standing with him on the lawn, he said, 'I suppose, sir, you remember Peggy?' 'Of course,' it was answered; 'the two-year-old Exmoor pony we bought at Maidstone fair and put into the mowing-machine when she was almost unbroken. What battles you had, and what a good bit of stuff she was when she came to years of discretion.' 'Ah!' replied the gardener, 'I used to think that no man ever had, or could have, such a rampaging job, but now that I've got to mow with seven lunatics, most of 'em wanting to sit down, I often wish that I was back with Peggy.'"

THE ROSE GARDEN—A DEFENCE AND A "SELL."

After giving good advice on the herbaceous border, our author discourses on his favourite theme—Roses, and proceeds—"And who are you, I hear the critic say, 'Who made you Lord Chamberlain to the Queen of Flowers?' I make answer—because he who would guide others must show his credentials—'If you please, Mr. Critic, I am the man who invented Rose shows, and won many cups, and wrote a book about Roses,

and am the President of the National Rose Society, and for fifty-four years I have admired and studied the Rose.' If the critic intimates, not for the first time, that I have wasted this portion of my life and dishonoured my sacred vocation by these diversions, I lose all sense of humility, boldly proclaiming that I have not only derived from horticulture great help and refreshment in my work; but, brought up among horses, hounds, and partridges, I have from boyhood to middle age occasionally enjoyed the sports of the field; and that as regards my ministrations in a small country parish, I always maintained the daily service of the Church and my daily visits to the school; knew every man, woman, and child in the place, and have preached, since I took orders, in 500 churches from the Land's End to the Border. This is rank egotism, but it is provoked by rank ignorance." Now for the "sell." The Dean, on being asked to propose "The Visitors" at a great city dinner, observed an elderly gentleman with his hair cut close with the exception of an enormous white moustache. "He wore over his breast a broad crimson ribbon, and I said to myself, 'That's a Maréchal of France!'" Accordingly I proceeded to welcome our friends from France with a polite bow to the Maréchal, and finally expressed my special sympathies as a rosarian indebted to France for the introduction of our most beautiful Roses. "It is no exaggeration to say," I concluded, turning with a sweet smile to the Maréchal, "that 'La Rose est la Reine des fleurs et la France est la Reine des Roses.'" I sat down and inquired the name and title of the illustrious soldier, and was told that he was a London pawnbroker, wearing his badge of office as president of a benevolent society."

GENERAL SHABLEKINE.

This is not the heading of a chapter, but the name of a Rose recommended by the Dean with the following footnote. "This Rose is not in our English catalogues, and must be procured from the raiser, Mons. Nabonnand, Grasse, Cannes, Nice, France. Lord Brougham describes it as 'caring neither for cold, damp, sun, or mildew;' and he declares 'that if a law was passed that one man should cultivate but one variety of Rose, he should without hesitation choose General Shablekine, as being without a rival, flowering continuously, with 100 blooms of equal merit on a plant. Its constitution and hardiness would guarantee its success in our colder climate, and of all Roses it is the most faithful and generous.' Without disparaging the merits of the General, one could have wished that the flower had received a more euphonious title. The Rose by any other name would have smelt as sweetly."

OTHER GARDENS.

Excellent and instructive are the chapters on the rock garden, the water garden, the wild garden, and the cottage garden. The author has a great desire to help the sons of toil and make their homes brighter and better, and hence his appreciation of the efforts of County Councils, and indeed all who give encouragement and instruction with that laudable object in view. Nor are children's gardens overlooked, while an admirable chapter on town gardens is contributed by Mr. Marsland.

A WORD TO YOUNG GARDENERS.

In the "Pedagogue's Farewell to His Pupils" we find these words, which cannot be too widely disseminated. "I must earnestly implore the young gardener not to be wise in his own conceits. Of all the prides since Lucifer's attaint, there is not one more disastrous to progress and success than that which will never acknowledge ignorance, and would rather remain in darkness than ask a neighbour for a light. I confess in sackcloth and ashes that I was misled for the greater portion of my life by this moral obliquity, and I am sure that, if I had resisted and overcome it in my youth, I should have quadrupled my store of useful knowledge. Nor can I derive much solace from the fact that this stupid arrogance is a common disease: so is the influenza. It wastes time, loses opportunity, and gets in other people's way, like a loafer at the corner of the street."

Let it not be supposed that we have extracted the "best bits" from this entertaining and suggestive work. We have done nothing of the kind. We have simply taken a few lines from about half the chapters, in their order, and which fairly represent the style and character of the book. The volume comprises 300 pages of matter, much of it even better than the samples. It ranges from gay to grave. There are parts that will make the reader smile and others that will make him pause and "think." It will impress on many that the great ecclesiastic and gardener has a big and tender heart, full of sympathy for the toiling millions who strive to improve their lot in life by diligent labour in the garden; and the rich whom he esteems the most are those who cherish their own gardens, and in addition give help and encouragement to the present and future working populations of the land he loves.

CERCIS SILIQUASTRUM. — In several gardens about Kew fine examples of the "Judas Tree," as this plant is popularly called, are to be found, all flowering with exceptional freedom, while in the Royal Gardens several exceptionally fine specimens are a mass of colour. The habit of the plant is rather straggling, if pruning is not attended to while young, which often causes it to be planted in out of the way corners; if, however, it is kept in shape from the time it leaves the nursery, dense round bushes can be had, 12 feet or more in height, deserving a place in a prominent position. On different plants various shades of colour can be had, some forms being almost white, others rosy red, with several intermediate shades. It is not particular regarding soil, a medium loam, perhaps, being most suitable for it.—W. D.

TROPÆOLUM SPECIOSUM.

MANY have been the complaints made with regard to flowering this beautiful creeper in the south of England. People who have returned from a tour in Scotland, and who are at all imbued with horticultural taste, come home wondering at the luxuriant manner in which it flowered in all kinds of situations, covering walls and outhouses, climbing into Apple trees, and in fact behaving very much like our common Bindweed, in places becoming quite as much a weed as that plant. When it was suggested that we might do the same with it in our southern climate, we were told that was impossible, the Scotch mists were favourable to its growth, and that in our drier climate we could not expect it to grow so luxuriantly; but as it is a native of Chili, one could not quite think that this statement has any strong foundation, nor has it in truth. I have seen it growing vigorously on the walls of Berkeley Castle in Gloucestershire, and Messrs. Paul & Son have it in great luxuriance in their nursery at High Beach, in Epping Forest. I have myself failed with it most egregiously.

I have several times obtained liberal supplies from Scotland, have planted it in different positions in my garden; it rambled about as is its wont, but never flowered with any degree of profusion. It got amongst the bush fruits, and was, I suppose, destroyed when they were being dug over. I tried another plan with it last year, and having obtained a small tub out of which I knocked the bottom I placed it in a border facing north. It did not flower, but has come up strongly this year, and I am hopeful I may be more successful. I have given several tubers away to friends, and they seem to have been equally unsuccessful, and have not been able to keep it beyond the year.

I think it must be a most capricious plant, for I came across a very remarkable instance of its success in a neighbour's garden. Two years ago he planted some tubers against a fence facing S.W.; the plants flowered fairly well the first year, but the second year he hardly saw anything of them until his gardener said, "I wish you would get up here, sir, and see this Tropæolum." It had worked its way under the fence, and there, he said, "I saw a space about 15 square feet one mass of brilliant scarlet," evidently showing that what I was always told in Scotland, that it preferred a northern aspect, was true. The stronger shoots have remained untouched by the winter, and he is now endeavouring to get some of the shoots back again to their original position, but he will also plant some in a more congenial place.

It is strange that a plant like this, coming from Chili, should prefer a northern aspect, though, of course, one does not know in what places it grows in that country, as there may be various positions there that it affects rather than others. Now as ours is a dry country, the average rainfall being low, and as it succeeds so well in Scotland, which is the very reverse of this, it would seem to be one of those plants which can accommodate itself to various positions. I do not think that it is at all exacting in the matter of soil, though I imagine it prefers a light and open one. Perhaps this brief account may give encouragement to some who have tried this very lovely plant, and have failed, for whether we regard the delicacy of its foliage or the brilliancy of its flowers it is well worthy of cultivation.—D. Deal.

CARNATIONS AT ICKWORTH.

GARDENING in all its branches is well carried out at this beautiful place, the seat of the Marquis of Bristol, under the superintendence of Mr. H. Coster, but the palm for excellence must certainly be awarded to the tree Carnations. The cultivation of this most beautiful section is understood by Mr. Coster as by few other gardeners, and it is a pity he does not give us a taste of his quality at some of the London exhibitions. The first thing that strikes a Carnation specialist on entering the flowering house is the fine healthy appearance of the whole of the plants: not only the easily grown kinds, but sorts that in most places are found difficult to grow.

As an instance, there is the beautiful Mrs. Robert Sydenham. This is in many places an absolute failure, and only in a few can it be said to be really a success, but at Ickworth the plants grow almost as strong as Uriah Pike, and produce abundant "grass" for propagation. And such splendid flowers, the contrast between the creamy yellow ground and the rosy flaking being exquisite, while the form and substance even of side blossoms is remarkable. This variety alone is worth a long journey to see, but the Ickworth collection is replete with such, all the up-to-date varieties now in commerce, and many grand things not yet introduced to the public being included.

I often find amateurs and gardeners spending a lot of their own and their employer's money upon new and improved high-priced varieties of plants, but they are so poorly cultivated that they show no advance upon previously known kinds. Now at Ickworth not only are the very latest novelties added to the collection, but each and all are so well cultivated as to bring out their true characteristics, and show the real advance upon known kinds.

I am not going to give a list of varieties noted, or long descriptions, for such are not interesting reading, but I would like to mention two lovely varieties that I have frequently seen exhibited, but never in such form as here. They are Jessica, a soft satiny rose, and Exile, a rather deep r tint of the same colour. I am quite within the mark when I say that I never saw such perfect blooms, and it is not to say there are only one or two, the house is filled with such. Lady Bristol, a lovely seedling of Mr. Martin Smith's not yet in commerce, is a beauty, and there are many more almost equally worth mention.—H. R. RICHARDS.

THE TEMPLE SHOW.

AMONGST exhibits at this great show, the production of which has been so worthy of the R.H.S., I regarded as an exhibit of high-class culture, superior in relation to the plants to any yet seen, that grand group of double and single Begonias from Messrs. T. S. Ware & Co. It was universally admitted to be the finest show of these plants ever seen. Other great exhibits, exclusive of Orchids, were Turner's and Paul's Roses; Veitch's Caladiums, Phyllocaetuses, and hardy plants and flowers; Smith's grand Clematises, Fisher, Son, & Sibray's fine group of foliage trees and shrubs, Cutbush's wonderful group of Carnations and other plants, Sutton's singularly interesting collection of Nemesises, the Guildford Company's and Messrs. Backhouse's miniature rock gardens, Messrs. McIndoe's and Fyfe's collections of fruit, and Messrs. Bunyard's Apples. Messrs. T. Rivers & Son's collection of trees in fruit was good, but not equal to what the firm has shown in some previous years.

But how little effort in producing artistic or picturesque effect was seen! How the London public would have been sensationalised over one of the Shrewsbury groups, the most marvellous plant arrangements of modern times. Messrs. Fisher & Son's Maples, and Messrs. Cutbush's Carnations, Messrs. Veitch & Sons' hardy flowers and plants, Mr. G. Paul's Roses, and the miniature rockworks mentioned, really quite charming, were the best efforts in the direction of securing artistic effect. When it is said that artistic arrangements are impossible at the Temple the question is begged, but they may be difficult. Mr. White in arranging the President's splendid Orchids, did so thinly, and they produced a far more pleasing effect than did any other Orchid exhibitor.

FLORALLY DECORATING FRUIT.

Opinions differed at the Temple Show as to whether Mr. Fyfe's really superb collection of fruit was or was not improved in appearance by the addition of some flowers in small glasses. Still, that the flowers did add charm in the estimation of many persons there could be no doubt. But I did not think Ixias and Sparaxis set into low broad glasses with some fine Thrift-like foliage quite the best flowers for the purpose; nor were the receptacles. I like small vertical glasses best, and the flowers very light with fine Fern, such as the fronds of *A. gracilimum* and a few Grasses. The glasses need not be all of one pattern, and certainly not all of one height. The flowers should not be too numerous. Given these conditions, flowers undoubtedly add to the beauty of fruit collections.

VEGETABLE COLLECTIONS.

At the Temple Show there were for the time of year and season many fine exhibits of vegetables, prominent amongst which were Peas, Tomatoes, Cucumbers, and Asparagus, all of superb order. But the finest of these were found where collections were not too varied. In the cases of collections intended to be very representative, the effort to have such did in some instances result in bringing some things not attractive, and better left at home. There was not one of these comprehensive groups but would have been more attractive and more worthy of honour had there been much less of inferior produce in them to detract from the merits of what was good. It is far more meritorious to show a few kinds of vegetables prominently and well, than to include many of very inferior merit. I should like to see exhibitors another year taking this hint, and acting as advised.

SOCIAL ASPECTS OF THE TEMPLE SHOW.

It is very evident that in spite of the kindness of the R.H.S. Council in offering to sell gardeners in advance tickets for the Temple Show on the second day at the reduced price of 1s., that the privilege is not largely availed of, and that for one gardener there on Thursday there were twenty on the Wednesday. No doubt gardeners prefer the first day, because horticulturists of all classes are then seen. Even the R.H.S. Committees constitute a big gathering of various gardeners, amateur and professional, and of course their duties call them to the Temple on the first day. Very few of these are seen the next day. Again, exhibitors and their assistants constitute a great body of gardeners, and they are always strongly in evidence on the first day.

No wonder, then, that Wednesday is the favourite day with gardener visitors, and they can be met with by hundreds then. That the Temple Show is therefore the greatest social gathering of gardeners for the year found in the kingdom there can be no doubt. But whilst it may be thought desirable to utilise to some practical purpose this big gathering, everyone familiar with the labour involved in the show work, and in the time absorbed by purely friendly greetings, men well known to each other meeting but perhaps once a year in this way, knows that any organised gathering of the clans is out of the question. Without doubt so far as attendances can be secured the Chiswick and Crystal Palace gatherings offer the best opportunities for organised gardeners' meetings.

VENTILATING FLOWER SHOW TENTS.

The altogether unlooked-for heat which greeted the Temple Show seemed to illustrate in a manner all too effective the apparent incapacity of tent makers to produce any real approach to proper ventilation; on all the three days the tents became stiflingly hot, the temperature being, for the good of the exhibits and comfort of the crowds of visitors, about 20° too high. Certainly, there were times when the temperature must have ranged from 80° to 90°. No wonder if those who had once run the gauntlet of the three long tents (from which, once in, there is no escape till the other end is reached) refused to return *via* the same way. No wonder, also, that cut flowers collapsed suddenly and distressingly. Such things as Roses, Poppies, Pæonies, Violas, and many others, were ruined in a few hours. No one seemed to have made any arrangements for a supply of fresh flowers the next morning.

The only remedy for this sort of thing, and it is very common at summer flower shows, is to be found in liberal top ventilation. But that is never supplied. Tent makers turn out their canvases in huge pieces without opening of any kind, and the pent up air becomes superheated. We want large openings in the roof, which can be opened or closed in a moment, as needed, by long cords. Any such arrangement would be intensely welcome. Probably if flower show committees would insist upon good ventilation being an absolute condition of payment for use, tent makers would soon meet the difficulty satisfactorily.—A. D.

[We have had letters of complaint too strongly worded for publication, on the overheated and unhealthy atmosphere of the tents of the above show. The greater the faultiness of tent construction, the greater the necessity for doing the utmost that can be done to reduce the inconvenience, or we might almost say the sufferings, of the dense crowds wedged together in a long range of overheated marquees, from which quick escape is impossible. The Temple Show is only one among many during hot weather at which visitors have serious cause to complain. It is true that in some instances the upright canvas is unlooped from the roofs here and there, as was done at the Temple; but in nine cases out of ten this relief is resorted to hours too late to be effective. If ventilation is afforded in the simple manner indicated an hour before the atmosphere becomes overheated on a sunny morning the benefit resulting to products and visitors remains all the day; but if the unlooping is done an hour or more too late, when the atmosphere is already stifling, only a comparatively small amount of good is or can be effected. Every gardener knows that if a vinery is allowed to get 20° too high before the sashes are opened the excessive heat cannot be subdued without injury to the Vines; but with timely ventilation the oppressive heat can be either prevented or reduced to a minimum. It is the same with a marquee, only in this case the matter of early ventilation is of even more importance, because provision is so rarely made for the escape of hot, vitiated air through openings in the roofs, though there are exceptions. The subject of tent ventilation requires the serious attention of all managers of flower shows.]

SHORTIA GALACIFOLIA.

J. BENNETT's question relative this pretty plant can be best answered by quoting from Mr. Robinson's "English Flower Garden," a work that ought to find a place in every horticultural library. We there find it described as "an interesting and beautiful plant. It was first discovered over a hundred years ago by Michaux in the mountains of North Carolina, and re-discovered in 1877. It was found growing with *Galax aphylla*, and forms runners like this plant, being propagated by this means. The plant is of tufted habit, the flowers reminding one of those of a *Soldanella*, but large, with cut edges to the segments, like a frill, so to say, and pure white, passing to rose as they get older. There is much beauty, too, in the leaves, which are of rather oval shape, deep green, tinged with brownish crimson, changing in winter to quite a crimson, when it forms a bright bit of colour in the rock garden or border. It succeeds well in various soils and is hardy. It is also a delightful plant in a pot, as the flowers on their crimson stems are pretty, and one gets also the prettily tinted leaves." The woodcut (fig. 106) will be of interest to our enquiring correspondent.

PACKING PEACHES AND NECTARINES.

MANY and various are the methods of packing Peaches and Nectarines adopted, but if all presumably answer the purpose of those who follow them it cannot be truthfully asserted that there is no room for improvement, in some of them at any rate. As a matter of fact, much valuable fruit is practically spoilt owing to either careless or faulty packing. No fruit is more easily bruised and disfigured than ripe Peaches; and what is also a very important point, no fruit is more quickly tainted in flavour owing to being surrounded or enclosed in either scented boxes or strong-smelling packing material. So susceptible are they of being affected in flavour by contact with scented or musty material that Peaches, and in a lesser degree Nectarines, after being gathered ought never to rest on anything but fresh tissue paper with a padding of some kind underneath. Fruiterers sometimes display them on fresh Vine leaves, but those who know their business take good care to remove the leaves before night arrives. Naturally some varieties are superior in point of quality to others, Royal George, Bellegarde, Crimson Galande, and Grosse Mignonne being among the best, but the majority of other sorts are quite good enough for most people, and if not first-rate in flavour there is all the more reason why every care should be taken to guard against tainting them.

Peaches and Nectarines to travel well ought not to be quite ripe when packed; nor in any case should they be left on the trees till the falling stage is reached. They keep better, travel with least damage, and are really more luscious and richly flavoured when the full ripe state is anticipated by at least one day. Lightly pressing the under side of a fruit that appears to be ripe enough to test will not injure it, but there must be no finger or thumb marks. For the markets an appearance of ripeness, and in particular plenty of colour, are most needed; slightly under-ripe fruit best meeting the case. Fruit that is inclined to cling to the trees must not be roughly dragged away, or thumb marks will detract considerably from their value; but the gatherer should have a pad of

cotton wool in his left hand with which to firmly grasp the fruit, and then, where possible, to cut through the footstalk with a pair of Grape scissors. Nectarine Lord Napier is one of the most difficult to gather without bruising, and the pad and scissors ought certainly to be used for detaching the variety from the trees. If all the trees are examined every morning, and each fruit fit is gathered, there will be no necessity for suspending nets under them. The latter will only break the fall, and do not wholly prevent bruising.

Opinions vary both as to the form of box and packing material for Peaches and Nectarines. The fruits vary greatly in size and form, some being extra large both as regards depth and circumference, others being flat and of a good breadth, and still more comparatively small in every way. The boxes, therefore, ought also to vary considerably, it being little short of madness to pack deep fruit in shallow boxes with an insufficiency of packing both above and below to prevent bruising, while very deep boxes are unsuitable for small or flat fruit, owing to the unavoidable springiness and eventual shrinkage of the packing material. What market salesmen favour are boxes 24 inches long, 14 inches wide,



FIG. 106.—SHORTIA GALACIFOLIA.

and 4½ inches deep, these holding twenty-four fairly large Peaches and rather more Nectarines. These, however, are scarcely deep enough for Sea Eagle, Walburton Admirable, and large fruits of Barrington Peaches, and are larger than are required for fruit from very heavily laden trees. It is advisable to have boxes made for private use in sets, the depths being varied. If there are no opportunities of getting them made very cheaply in the neighbourhood they can be obtained for surprisingly low figures from advertising makers. I find cheap light boxes from grocers and confectioners answer well for sending by post, being also frequently used when there is no likelihood of the receivers returning the empties. Market salesmen and leading fruiterers now-a-days are always ready to send boxes and baskets suitable for any kind of fruit that is to be consigned to them, and all things considered it is much better to have their boxes than to provide for oneself. Boxes with separate compartments for each fruit are a great mistake.

We have next to consider which is the best kind of packing material out of the several available. Experienced packers largely favour moss for Peaches and Nectarines, and it is extensively used for the purpose, especially by senders to markets. When abundance of clean springy moss can be raked up from lawns, or otherwise collected, and dried, well beaten, and thoroughly cleared of rubbish, it answers well, and is the cheapest material that can be had. Unfortunately moss is by no means generally plentiful, at least not such as may be said to be fit for packing soft, easily tainted fruit in. Coarse, earthy-smelling moss will not do, and small quantities of that which is suitable are of little value. Moss

must be used freely and not gingerly. First line the boxes with sheets of packing paper, and then place a firm layer of moss, not less than 1 inch thick, in the bottom. Wrap each fruit in a square of tissue paper, bringing the points of the latter well up together over the nipple of the fruit, and then place in the box and completely surround by moss, enough of the latter being used to well divide the fruit. The base of each fruit ought always to rest on the bed of moss in the bottom of the box, and only the tips of the paper protrude above the same material when finishing off. The lid should press down rather tightly on the paper and moss, the packing being so firmly done as to prevent any movement inside the boxes when these are tested by shaking rather violently. If the packing will not bear this test at the outset, what state will the fruit be in after a certain and inevitable amount of shrinkage accompanied with some rough handling has taken place?

Paper shavings are sometimes recommended as a substitute for moss, but according to my experience they do not answer well, it being a very difficult matter to prevent the fruit shifting in them, and bruising accordingly. Bran is even worse, while the coarser kind of wood wool or shavings is too harsh, too springy, and too strongly scented to be suitable for packing Peaches and Nectarines in. More recently a superior kind of wood wool has been introduced, this being much softer, and if well opened out and cleared of dust a few hours prior to using there is no smell perceptible. This I am now using for Peaches and Nectarines instead of cotton wool as formerly, and have had no complaint either of the fruit travelling badly or of being tainted in flavour. I have hitherto found Peaches and Nectarines travel better in cotton wool than any other material, always provided each fruit is carefully enclosed in soft paper, and then bound round with folded strips of the wool of sufficient width and in such a manner that the latter shall prevent the fruits touching each other or the box. Cotton wool ought always to be folded skin side outwards, and even then should never come in contact with fruit. When returned it must be dried prior to being used afresh, as it is apt to become moist, also heating slightly, and smelling strongly.

I now use the improved wood wool. The boxes are thickly and firmly padded with it, and after the fruit have been enclosed in squares of tissue paper each has a bandage of wood wool wound round it, all being gradually packed closely and neatly together. The box lids closing down tightly on the points of paper and upper part of bandage, there is no shifting of the fruit afterwards. This plan of bandaging the fruit will be found to answer better than burying them in nests formed in a well-filled box of wood wool, as in the latter case the elasticity of material is apt to gradually reverse the position of the fruit. The fewer nails used in fastening down the better, but the boxes may well be stringed together, and very plainly labelled "Fruit, with care."—MARKET GROWER.

ISLE OF WIGHT.

THE monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided over a good attendance of members. An excellent paper by Mr. J. Hygate, The Briary, Cowes, on the "Cultivation of Dahlias" evoked an interesting and profitable discussion, which was taken part in by the Chairman and Messrs. W. Cook, T. Collister, S. Banks, G. Verdon, J. B. Spencer, and S. Heaton. Mr. T. Collister, gardener, Steyne, Bembridge, staged a collection of Aquilegias (Veitch's hybrids), and Messrs. W. H. Rogers & Son, Red Lodge Nurseries, Bassett, exhibited a magnificent collection of Rhododendrons, which afforded much pleasure and interest to the members, who carefully examined the huge trusses of blooms of varying forms and colours. A vote of thanks was accorded these gentlemen, and also the lecturer, for their services in helping forward the objects of the Association. The meeting was brought to a close after the election of forty-nine new members, which brings the number on the register to about 400.

On the Saturday previous 100 members availed themselves of an invitation from the Rev. R. L. Morris to visit Brook Rectory, with the primary object of witnessing a bee demonstration by the rector, who is an expert apiarist. On the arrival of the party they were met by the Rev. and Mrs. Morris, who had prepared light refreshments, which were much appreciated after a drive of ten miles o'er hill and dale under a scorching sun. The bee members, accompanied by the rector, then wended their way to the apiary, where a practical bee lecture of great interest and edification was given; whilst the horticultural members inspected the gardens and greenhouses, which reflected great credit to the able gardener, Mr. E. Hendy. Previous to their departure for Brook House, the residence of the President of the Association (Sir Chas. Seely, Bart., J.P.), the party was photographed on the lawn, after which a vote of thanks, with rounds of applause, was given Mr. and Mrs. Morris for their kind invitation, and the hospitable manner in which they had entertained the visitors.

On the arrival of the party at Brook House, which is in close proximity to Brook Rectory, the members were met by Sir Chas. Seely and Major Chas. Hilton Seely, M.P. for Lincoln, who conducted them to the orchard house, which is of very large dimensions, where an excellent repast was in waiting, and which received full justice from all. After tea, votes of thanks were given the President and members of his family for the interest taken in the visit of the Isle of Wight Horticultural Improvement Association, and also for their hospitality. The party inspected the pictures which adorn the walls of this palatial residence, also the gardens, stoves, and vineries attached to Brook House, which are ably managed by

the genial and energetic gardener, Mr. W. Tribbick, F.R.H.S. The members were again lined up for photographic operation. Previous to the departure of the party for various parts of the Island, a meeting was held at Brook Reading Room, where the Rev. R. L. Morris gave a short address on bees and bee-keeping.

As the party left cheers were given for the rector and the President. The drive through the well-wooded country lanes of the Garden Isle in the cool of the evening was exceedingly pleasant. On Thursday, June 1st, a large number of the members availed themselves of an excursion to the metropolis with the object of visiting the great Temple Show. They were highly pleased with what they saw, and many of the wrinkles gleaned will assume practical form at the forthcoming Island shows.—S. H.

THE PROSPECTS OF A FRUIT CROP.

AT an earlier period of the spring the prospects of a good fruit crop were very assuring, every kind vying, as it were, one with the other for supremacy. The blossom both on Apples, Pears, Cherries, and Plums were never finer than this year, and taking into account the extreme drought of last summer, the flowers were unusually strong. As is usual Pears which were the densest in flower are now the thinnest in fruit, Pitmaston Duchess, Benrre Clairgeau, and Winter Nelis illustrating this in a very striking manner.

Generally speaking the Pear crop according to present appearances is, or should be, a very good one, yet it would be an uncertain venture to describe it as an absolutely safe one; frost coming as late as this date—the end of May—has been known to change the aspect of plenty into that of extreme scarcity in one single night. In addition to the varieties just named there are others very thin in crop, both in the open as bush or pyramid trees, and on walls. On the whole, however, there should not be any serious break in the autumn and winter supply unless unforeseen troubles intervene to change the prospect.

Apples, perhaps the most important of all English fruits, flowered with the same regularity and abundance, and a casual survey would seem to allay present anxieties. The weather, which for some time has been anything but genial, does not improve much at the time of writing, cold east and north-east winds prevailing continually, and slight frosts experienced on several mornings recently. The generality of trees are now past the critical period, though one or two sorts, including Court Pendu Plat, showed doubtful wisdom in the choice of a late period this season for flowering. The chances are in favour of the early sorts this time; late ones have their opportunity in some years, but their present appearance raises a doubtful thought for full measured crops for next winter. As with Pears, so with Apples, no certainty of crop remains until a later date, but there is every indication that from among the wealth of blossom there remain sufficient apparently swelling to justify the hope of a crop.

Plums, which constitute a most important summer and autumn crop, fared badly while in bloom, and apparently also in a bud state. On many trees on which the first burst of blossom had been made, sharp frosts occurred which it could be seen without very close examination inflicted irreparable injury to those fully expanded; but this, or some other cause, rendered a considerable proportion of the others abortive. On emerging from the flowering stage there seemed to be a large set, but time, which works many changes, has proved very unkind in dealing with Plums. On some trees and sorts there are a quantity about the size of half-grown Peas, and in this state they remain, while those perfectly set have swollen to the size of thrushes' eggs. Many trees are without fruit, and others have very few. The Gages, Coe's Golden Drop, Kirke's, and Washington, which flowered more freely than usual, have only a few scattered fruits remaining; Grand Duke, Prince Engelbert, Victoria, Blue Gage, Pond's Seedling, and Jefferson's are those bearing the most freely.

Cherries flowered as freely as ever, both dessert and Morellos, and what is equally satisfactory, they have set enough and to spare, both on east, west, and north aspects. Here they are neither grown in bush nor standard form, but only on walls. There were no frosts, however, during the time they were in flower; so in the south and west, at any rate, there should be plenty of Cherries.

Gooseberries met with the same fate as Plums, though necessarily at an early date, sharp frosts occurring at the time when their growth and flowers were tender. Some sorts, the smaller ones in particular, have set very well; others, of the Lancashire type, are thinly scattered over the trees. Whinham's have less than half a crop, and the same thing happened last year, and as a consequence, the trees, being comparatively young, are extra vigorous in their lateral growth. So far we have been spared any attack from caterpillars, an immunity we owe to the early visits from the cuckoo. Red and Black Currants are full of promise; Raspberries, a portion of the crop growing on heavy land, show signs of the frost's action on the fruiting canes. The young suekers, too, had their tips browned by the same frosts. A younger plantation on lighter soil does not show the same effects wrought by the cold.

Peaches on the open walls flowered finely, and were overtaken by a very severe frost, which gave the open flowers the appearance of being totally destroyed. There remained, however, a sufficient number to provide a full crop—an agreeable surprise. With coping and a double

thickness of fish nets, blister in the leaf has been almost entirely absent. Apricots are about half a crop; the prospect at the time of flowering did not give the hope of any remaining after the destructive frosts which prevailed at the time.

It is yet early to speak of Strawberries more than to say there is a good show of flower trusses, the plants generally vigorous, and the soil well stored with moisture. Many of the earliest blooms were blackened by the frost of the 27th and 28th ult.—W. S., *Wills*.

THE CARE OF CUT FLOWERS.

THERE is no sweeter sound for the florists' ear than the sharp, crisp rustle of a bunch of fresh Roses, Chrysanthemums, Violets, or Carnations. The rustle tells the story of their quality, perhaps more than any other one point, yet how rare it is, especially in a box of blooms. The care of flowers during and after cutting, during and after travelling, is as important a consideration as their cultivation, and it is useless to try to produce good flowers unless proper care is given them afterwards. Many a splendid bloom has failed of a good sale because of careless handling.

The responsibility of the man entrusted with the care of the stock between cutting and its final sale is second only to that of the grower, and he is fully as difficult a commodity to secure as is the good grower. A prominent Rose grower has stated that one of his most troublesome problems is to find men who know when a bud is ready to cut. This ability is a sort of intuition governed by no exact rule, impossible of intelligent analysis, and imparted with greatest difficulty to even the aptest scholar.

The fewer handlings a flower has to encounter the better, and this fact should never be lost sight of from the moment the bud is first touched to cut it off. All flowers are improved by having the stems immersed in water for a number of hours immediately after cutting. The jars should be of varying depths, sufficient to accommodate a considerable part of the stem, and numerous enough so that any crowding of the flowers can be avoided. The flowers, when placed in jars, must be graded according to length of stem, for, with Roses especially, much damage is done to the shorter stemmed buds by the spines on the stems and leaves of others, and all flowers are subject to more or less damage if irregularly bunched. Wetting of the petals should at all times be guarded against. Carnations and Violets will be ruined by wetting, and Roses are better without it. Violets or other short stemmed blooms when bunched ought to be placed in pans of water, supported by racks of wire, or other construction that will admit the stems to the water but leave the flowers perfectly dry. While on the subject of Violets it may be added that a hood of waxed paper carefully adjusted over each bunch, and left there until they are sold, will do much towards retaining the very evanescent perfume without which the Violet is an unsaleable commodity.

As to the place of storage during the hardening process, it is a matter which does not receive the consideration from the average grower which its importance warrants. A mouldy, musty cellar is no fit place for delicate flowers. In all cases the storage room, whether in a cellar or elsewhere, must be for flowers exclusively, and if with separate compartments for different varieties, so much the better. It must be dry, absolutely free from draughts, and scrupulously clean at all times. It should be sufficiently roomy that the jars will never be crowded together, and so that they can be handled or removed without being brushed against.

Freshness and crispness being of first importance, it follows that the least possible time after they are in good condition should be consumed in getting the flowers from the greenhouse to the customer, and during the time they are in transit every device that will conduce to this end is worthy of adoption and employment. Whether for a short or a long journey, the expert flower packer will provide for the arrival of his goods at their destination in, as nearly as possible, the same perfection in which they start, by packing as late as practicable before despatching time, by acquainting himself fully with starting and delivery hours of trains, by insisting on the co-operation of the companies in the matter of promptness and care, and assisting them to this end by informing them of the perishable character of the stock and by providing convenient boxes with rope or other handles by which they may be carried right side up always. In packing he will take precautions against bruising, breaking, tearing, shifting, heating, freezing, or soaking by packing, so that no flower will come in contact with the side or end of the box or any other avoidable substance, by firming the stems with frequent cleats, and by abundant paper coverings in cold weather.

Roses are best packed in lines, one bud at a time, with layers of soft, non-absorbent paper between each row to prevent tearing of petals or foliage by contact with thorns, and with an occasional cleat of wood fastened across the stems. Some Carnation growers who aim for the best results pack their choice blooms in like manner, giving each individual flower careful attention, and it pays, for, while Carnations will stand more rough handling than some other flowers, yet their recent development has made buyers critical, and they want individually perfect blooms, for which they are willing to pay the difference. In no case should Carnations be tied in bunches of more than twenty-five blooms, and tens or twelves are still better. Callas and Lilies are benefited sometimes by a wad of soft cotton carefully inserted in the flower to help in retaining its shape, but it should be done very delicately.

Boxes must be shallow. Except where Smilax, Ferns, or other

material that will bear crushing is included in the receptacle deep boxes are entirely out of date, for no flower can sustain the crushing of several layers on top of it and be in condition to offer to the critical buyers of the present day. Never despatch flowers in boxes that have been used for coffee, peppermints, salt fish or other odoriferous material.—("American Florist.")

A LOOSE SURFACE FOR PEACH BORDERS.

FRUIT borders of all kinds often get into a close and caked condition by the constant waterings, and in many cases growers are afraid to break this for fear of damaging the surface roots. I am as fully alive as anyone to the necessity of keeping the surface roots intact, and avoid disturbing one of them if it can be helped. But to leave the surface in the condition described above is worse than breaking a few roots, for it is impossible for either air or water to filter through it. Nor is either of these conditions necessary; that is the surface may be kept loose and open without damaging more than a very small percentage of the roots.

A plentiful supply of burnt earth and garden refuse is of the greatest benefit to Peach and Nectarine borders, having a slight manurial value, and being a great mechanical aid in keeping the surface soil loose. Immediately after watering, borders top-dressed with this material may be lightly raked over and tidied, this being quite impossible when not top-dressed, and even when litter has been used the appearance is not the same. Where the burnt refuse is not at command the borders ought to be lightly pricked up with a fork; not deeply, but only just sufficient to break the surface and allow the free passage of air and water. Trees in such borders are much more likely to succeed than others as noted above.—B. S. E.

GOLDEN-LEAVED SHRUBS.

THESE are often rather sickly or poor-looking objects, and many fail to keep true to their characters in the majority of soils, especially those that are heavy and cold. There are some soils which appear to have a peculiar effect in giving rise to golden and variegated forms of plants, and I knew a nursery some years ago that was noted in this way. It often happens, however, that if such variations are not well fixed before sending them out, or they are propagated rapidly under artificial conditions, they soon lose their beauty of foliage.

The Golden Elder is one of the most reliable of the stronger growers, and is invaluable for towns and smoky districts. Amongst smaller growers, but still healthy and free, are two that are not very commonly seen—i.e., *Neillia opulifolia* var. *lutea*, which is compact in habit, 3 or 4 feet high, with small lobed leaves of a bright, clear, and uniform yellow tint. Arranged in a mass in the front part of a shrubbery, or as a separate bed on a lawn, this is a useful addition to the attractions of a garden. A few taller trees of the reddish bronze-leaved *Prunus Pissardi*, rising from amongst these or similar golden-foliaged shrubs, also heighten the effect.

The Golden Mock Orange or *Syringa Philadelphus coronarius aureus*, is another useful shrub, of moderate growth and capital colour, which lasts well. Amongst the Dogwoods and Weigelas we also have some fine golden-leaved varieties, and as a diminutive shrub the golden form of *Ribes alpinum* is a favourite.—L. C. P.

NIGHT-SCENTED FLOWERS.

AMONGST the several comparatively cheap and easily grown night-scented flowers, *Mathiola bicornis* claims a foremost position, and with its congener, *M. tricuspidata*, should have a place in every garden. A few patches of seed distributed here and there over the borders in the spring will afford plants sufficient to pervade the garden each evening with the delicate fragrance of the somewhat insignificant flowers. The flowers close during the day (is it the sleep of the plant?) and are then nearly scentless. Its relation, *M. tricuspidata*, was introduced from Barbary in 1739, and is, in some respects, superior to *M. bicornis*—the flowers are of a slightly deeper lilac purple colour, and remain expanded during the day.

The shrubby Trumpet Flower (*Brugmansia* (*Datura*) *arborea*) also possesses the property of emitting a more powerful perfume in the evening than in the daytime—a proclivity not possessed by its near relation, *B. suaveolens*. The night-flowering Cactus (*Cereus grandiflorus*), holds a leading position as a powerfully scented flowering plant, but it is not so commonly cultivated in our hothouses as it was half a century ago. It is perhaps not generally known that the night-flowering *Convolvulus* (*Ipomoea bona nox*) possesses a very agreeable perfume; while deliciously scented is *Bouvardia Humboldtii corymbiflora*, particularly after sunset.

In addition to the foregoing, the two-spiked Water Hawthorn or Capo Pondweed (*Aponogeton distachyon*) is said to be additionally fragrant at night, as also is *Schizopetalon Walkeri*—a white flowered annual Crucifer from Chili. Doubtless other night-scented plants could be mentioned, but the above alone form a collection worthy of considerable notice to those interested in such sweetly smelling flowers.—W. G.

MESSRS. KENT & BRYDON, DARLINGTON.—We are authoritatively informed that Messrs. Kent & Brydon were appointed on the 1st inst. seed merchants to his Royal Highness the Prince of Wales, the warrant being granted to Mr. John Brydon personally, as trading under the above well-known designation.

THE YOUNG GARDENERS' DOMAIN.

CHRYSANTHEMUMS.

IN nearly every establishment the Chrysanthemum forms a main feature for decorative work during the last three months of the year, and in a few places even January is kept gay by such late varieties as W. H. Lincoln, Golden Gate, L. Canning, and Princess Victoria. The last two named, by careful management, may be had in bloom as late as February when grown in bush form. Presuming a good stock is grown in this form, the plants should now have received the final potting from 5 to 10-inch pots being suitable, using the larger size for the strong growers.

Most of the plants will require the second "stopping" to make them branch, and endeavour must be made to secure some good cuttings from this stopping, as these if propagated on a slight hotbed will make grand little plants for flowering in 5 inch pots: they will require stopping once, and if they make five shoots it will be quite enough. L. Canning is very fine when grown in this way. They can be disbudded or otherwise. We had a plant of Phœbus in a 5-inch pot last November with twenty-seven fully expanded blooms on it, and it remained fresh for three weeks. The cuttings should be inserted not later than the middle of June, and if placed round the sides of pots (five in a 3-inch pot) they will root readily, provided the soil used is sandy. When rooted pot singly in small 60's, and when large enough pinch out the point, and the plants having made about five shoots each, transfer them to their flowering pots—viz., 5-inch. By keeping these in cold frames, syringing and watering carefully, growth will be rapid. If the plants are placed outside in a warm spot and given equal attention to the exhibition varieties, the grower will be rewarded with splendid decorative plants for embellishment of the conservatory or vases.

In the final potting of Japanese and incurved, for exhibition or otherwise, no hard and fast rule should be allowed with regard to the compost, as the texture of the loam varies so much in many places, some gardens having light sandy loam, others heavy. In one establishment I know the best Surrey loam is used, and the "mums" are always worth a long journey to see. The loam we have at command is rather heavy, and not very fibrous, and I will give the exact quantity used, which is sufficient to repot 800 to 9-inch, and 200 to 10-inch pots, from 32's. Perhaps some of the "Old Boys" will feel inclined to criticise the composition, but if they will try a couple of hundred potted in the following soil, I can guarantee grand results, provided, of course, watering, syringing, timing, disbudding, and housing have been systematically done throughout the season. It is as follows: Twenty-four barrowloads of loam, with the fine soil sifted out when chopped, twelve of half-decayed leaf soil run through a $\frac{3}{4}$ -inch sieve, eight of sifted horse manure, previously prepared as for a Mushroom bed, two of lime rubble, two of burnt garden refuse, two of silver sand; to each barrowload is added a 5-inch pot each of bonemeal, Thomson's manure, and wood ashes, with a slight sprinkle of quicklime over the whole; thoroughly mix by turning carefully three times. The third time it is turned a sprinkling of water will almost sure to be needed as the work proceeds, but by no means make the soil too wet and sticky.

If the plants for the day's potting are selected the night before, watered and stood in a partially shaded spot near the bench, the repotting may be carried out without any hindrance. When potted stand the plants close together six rows thick. No watering will be needed for a few days, but the plants should be syringed with water several times daily during hot sunny weather, paying most attention to the bottom portion of the plants, or loss of leaves may result, as the wood is generally hard at the base of the plant at this season. In three weeks or less the plants may be put in their summer quarters, in single rows 5 feet apart. At this time they should all be re-staked, and tied to wires stretched from posts the whole length of the rows. When again well rooted liquid manure and a favourite artificial manure should be applied regularly until the blooms are half expanded. If aphid appear in points of shoots dust with tobacco powder, and vaporise when housed.—FOREMAN X.

FREESIAS.

No plants can, in my opinion, compare with Freesias, either for beauty or for fragrance, while their culture is a simple matter, compared with many others of less utility. The secret of success with these pretty Cape bulbs is they should receive a thorough ripening, without which it is useless to expect a good return in the form of fragrant blossoms. An open sandy compost, consisting of good loam, leaf soil, and some well-decayed manure (that from an old Mushroom bed being the best), with enough silver sand to make the whole porous, is very suitable.

The earliest bulbs should be potted at the beginning of August, these commencing to flower towards the latter end of December. From eight to ten bulbs may be placed in a 5-inch pot, and when potted a good watering should be given. Place the pots in a cold pit or frame, covering the frames with a mat to exclude the light, and as soon as the growths appear through the soil remove the covering. In a short time they must be moved to a house where they will receive plenty of light and air, which are conducive to a dwarf sturdy growth. They should be staked as soon as the growths require it, using thin wire if possible, as being neater in appearance than wood. The plants will be greatly benefited after the flower spikes appear by applications of weak liquid manure at alternate waterings, that made from soaking sheep droppings being the best.

After flowering they must be replaced on the shelves and kept well supplied with water, reducing the supply as the foliage shows signs of decay; an occasional sprinkling of some artificial manure when they are

finishing their growth will be found beneficial, as will liquid manure. They should be allowed to remain on the shelves if possible, but if not a frame will do, provided it is well exposed to the sun where they may get a thorough ripening. When growth has absolutely ceased shake the bulbs from the soil, sort them into the various sizes, the small ones being put into boxes to make flowering stock for another season, and the larger ones can be potted in succession to maintain the supply of flowers.

The varieties generally grown are *refracta alba* and *Leichtlini*, the former being in my opinion the more profuse bloomer and the latter the more fragrant. Both varieties, however, well repay the grower for the best attention, affording as they do plants for decoration in pots, and graceful flowers for cutting in some of the duller months of the year. The flowers last a considerable time when cut and placed in water.—H. C. H.



HARDY FRUIT GARDEN.

Thinning Fruit.—*Apricots.*—The early thinning disposes of the ill-placed, deformed, and undersized fruits. Those behind branches close to the wall or wires, or obviously crowded, are removed first. The removal of these relieves the trees and helps the better fruits to swell. Another thinning will reduce the fruits to a moderate number, and the final thinning should take place after stoning.

Peaches and Nectarines.—Dispense with all small ill-formed fruits as early as possible. Unfertilised fruits do not swell, and must be removed. Any that are inconveniently placed for swelling to a large size ought to be cut off. In the case of two fruits close together one should be removed. Finer fruits are secured by judicious thinning, but leave the final reduction of the crop until the stoning has been completed. The fruits then should not be left less than 6 inches apart, but regard must be had to the condition of the trees, a larger crop being left on vigorous trees than on weakly specimens, the same rule being followed with fruit left on the branches.

Cherries.—Dessert or sweet Cherries on walls may have the bunches thinned if fine fruits are required. Small and imperfectly formed fruits ought also to be cut out. One operation usually suffices for Cherries, but bunches or individual fruits needing removal may be cut out at any time. Morello Cherries set freely, but those fruits which do not swell are best removed for the benefit of the others. Severe thinning of these is not necessary if the trees are in vigorous condition. Good crops can be supported by giving assistance to the roots.

Plums.—Where bunches of fruit are set the least promising bunches or individual fruits may be clipped out. The fruits which take the lead are those which ought to be retained. Remove any close to the wall or likely to be shaded with foliage. It is only wall trees that need the fruit thinning.

Apples.—Fine specimens are not produced by allowing many fruits in a cluster, so in the case of wall trees and small restricted trees in the open a preliminary reduction of the fruits may be made. Well washing or syringing the trees with clear water after the fruit has set is a good method of clearing away the greater part of badly set fruits. At the next thinning the fruits behindhand in swelling may be removed. Finally reduce to two on a spur for fine fruits. The largest are produced by reducing to one.

Pears.—Pears set very freely in most districts when the trees are well established, and choice varieties ought to have the clusters thinned out, and the fruits in these gradually reduced to one or two. In the first place syringing or washing will clear away old blooms and small unfertilised fruits. Cordons and other trained trees on walls, bush trees and pyramids in the open, are capable of producing fine fruits by judicious thinning.

Gooseberries.—Fine fruits for dessert purposes can only be secured by thinning the berries. The choicest varieties may have the berries freely reduced for culinary purposes, carrying out the operation carefully, so as to leave good berries finally a few inches apart, or in clusters of two or three. The thinning should be confined chiefly to a few trees.

Strawberries.—Finer fruits are secured from Strawberries when the small fruits in the trusses are freely thinned. Carry out the operation when the fruit first begins to swell, leaving the more promising. It is good policy to thin out weak and imperfect flowers before the fruit sets, and where trusses of bloom are more numerous than the plants appear capable of supporting, the best only ought to be retained.

Currants.—Red and White Currants do not usually have the bunches reduced or the berries thinned out; but when required to be unusually fine for exhibition, the smallest bunches should be cut out, and any small berries removed.

Regulating Wall Tree Growths.—The removal of useless, ill placed, and gross growing shoots, leaves the trees in possession of medium-sized growths for future bearing and extension. Trees that bear fruit the next season on shoots produced during this must have attention at the present time. The fruits managed on this principle are Apricots, Peaches,

Nectarines, and Morello Cherries. Disbudding is the first process of removing superfluous growths. When the shoots attain to a greater length, those not required must be cut out. The growths retained ought now, therefore, to be laid in, securing them in a temporary manner in the direction they are ultimately to be trained.

Strawberries.—Cut off all runners as quickly as they form on Strawberries planted this spring. The flowers also ought to be nipped out. Where manurial mulching has not been applied to fruiting plants, a layer of short straw should be laid down. Give liquid manure to plants that have set fruit. The later fruiting plants may have a mulching of half-decayed manure containing short straw. Some early runners from young and vigorous fruiting plants ought to be layered into small pots or on turves. Fruiting plants must be well supported by plenty of water or liquid manure. The value of a good mulching lies not only in providing a clean bed for the fruit, but in affording nutriment to the roots, rain and waterings carrying it down into the soil.

FRUIT FORCING.

Peaches and Nectarines.—*Early Houses.*—When trees of the very early varieties, such as Alexander, Waterloo, and Early Louise Peaches, Advance and Cardinal Nectarines, have been cleared of their crops, the shoots on which the fruits were borne, if not required for the extension of the trees, should be cut away to the successional growths from their base, which will allow light and air free access to the foliage. Syringe forcibly to cleanse the leaves of red spider, and if this and scale continue troublesome, the prompt application of an insecticide will be necessary to eradicate the pests. It is highly important that the foliage be kept healthy, and to prevent over-maturity or premature ripening of the wood, it is necessary to keep the atmosphere of the house cool by ventilating to the fullest extent after the fruit is gathered, excepting when the weather be unusually cold and the wood somewhat sappy. Keep the borders moist, and in showery weather remove the roof-lights. Stop the laterals, especially the gross ones, but avoid giving a check by a great reduction of foliage at one time, as this has a tendency to hasten the ripening of the growths, and when such is the case the trees will be swelling their buds, or casting them through over-development when they should be resting.

Trees of Hale's Early, Rivers' Early York, Dr. Hogg, À Bee, Early Alfred and other second early Peaches, with Early Rivers and Lord Napier Nectarines, closely follow the very early varieties, and are now ripening or have the fruits ripe, the house not being started later than the new year. Those varieties are succeeded by Stirling Castle, Royal George, Dymond, and Crimson Gaiande Peaches, with Stanwick Elruge, Goldoni, and Humboldt Nectarines. The fruits are now ripening, and must not be syringed unless the trees are infested with red spider. When water hangs on the fruits for any length of time after they commence ripening, the skin is liable to crack. The trees must not be allowed to suffer by want of water at the roots, but any excess of moisture at this stage has a tendency to cause splitting at the stone. Every care, therefore, should be taken to secure good finish.

Houses Started in January.—Where the trees have been forced for several years consecutively they will have the fruit in condition described in the preceding paragraph, but where they are forced for the first time, or have progressed gently, the finest fruits will now be ripening. The leaves should be turned aside and the fruits raised on laths placed across the trellis, and secured with its apex to the light. This, however, ought to have been effected some time ago, and the fruit will, where that has been done, now have attained a good colour. If the weather prove dull and wet gentle fire heat will be necessary to secure a circulation of air constantly, the temperature being maintained at 60° to 65° at night and 70° to 75° by day. Cease syringing as soon as the fruit begins to ripen or soften, and take care to have the foliage free from red spider before the syringing ceases, as the pest otherwise will increase so rapidly whilst the fruit is ripening as to seriously jeopardise future crops. See that there is no deficiency of moisture in the border, and, if necessary, give a thorough supply of water, mulching lightly with rather short lumpy manure, such as that of a spent Mushroom bed or partially decayed, always sweetened, stable litter.

Succession Houses.—Hurrying the trees during the stoning process is sometimes fatal to the fruit, therefore give time for this most exhausting essential. Allow a free circulation of air, ventilating early in the morning, and close in the afternoon with abundance of atmospheric moisture, so as to raise the temperature to 80° or 85°, and ventilate a little afterwards for the night, the temperature being allowed to fall to between 60° and 65°. This must only be practised after the stoning is completed, as a close atmosphere has a tendency to promote growth, and is not favourable to that process; therefore avoid undue excitement when the trees are in that condition. When the fruits have stoned remove all superfluous fruits, and turn the other with their apexes to the light to insure colour and even ripening from the apex. Allow a rather free extension of the laterals as an encouragement of root action, but be careful not to crowd the principal foliage, and keep insects in check by syringing twice a day. Give thorough supplies of water through a light mulching of lumpy material, and supply weakly trees with liquid manure. Vigorous trees will not need more than a surface mulching, as high feeding will only cause grossness, which must be avoided.

Late Houses.—Train and tie in the shoots that are to carry next year's crop, allowing them to extend to a length of about 15 inches or more if there be space, or stop them at about that size, and pinch laterals to one leaf, being careful to avoid overcrowding. Young shoots required for extension or furnishing the trees should be allowed to extend as far as

space admits, and pinch all side shoots on last year's extensions that are not required for furnishing the trees, so as to form spurs and secure an equal distribution of the sap. In thinning the fruit leave a few more than will be required for the crop. A Peach to every square foot of trellis covered by the trees is ample to secure the finest examples of the large fruited varieties. The medium-sized and Nectarines may be left a little closer. Keep the leaves clean by syringing twice a day, and always sufficiently early to allow the foliage to become dry before night. If insects cannot be kept under by those means, promptly apply an insecticide. Mulch the borders with a little short manure, or if the trees are young and vigorous, lighter and less rich material will be more suitable. Water thoroughly whenever necessary, always giving sufficient at a time to reach the drainage.

THE BEE-KEEPER.

TREATMENT OF SWARMS.

THE closing days of May were remarkable for the favourable change in the weather, the maximum shade temperature during the last three days of the month being over 70°. From early morn to late at night the bees were observed returning to their hives heavily laden with pollen and honey. There being such a wealth of bloom in all directions it is not surprising that stocks increased at a rapid rate.

If the bees have not been provided with extra room in advance of their requirements swarming will now become general. From reports to hand there is not so much difference in the forwardness of stocks in the northern and midland counties when compared with those in the more favoured south. This is doubtless owing to the mild winter and the cold backward spring that has been general throughout the country.

Early swarms must be treated generously if good results are to be obtained during the present season. Should a sudden change take place in the weather, give at least a pint of thin syrup to each swarm every evening. This will enable them to build combs or draw out the cells if provided with comb foundation, so that when a favourable change takes place they will at once commence to store a surplus.

All arrangements should be made beforehand so that there may be no delay in hiving the swarm. As soon as the bees have settled they should be shaken into a straw skep and placed on the ground near the place where they alighted. The skep may be propped up a couple of inches so as to allow the bees that are on the wing to settle down, as it is often impossible to shake all into the skep. They must be shaded from the sun, and as soon as they have clustered in the hive it will be an advantage to place them in their permanent position.

If they are to remain in the skep it will not be necessary to disturb them. But if their future home is to be a frame hive, prop up the hive a couple of inches from the alighting board, place a sheet of newspaper in front of it, and shake the bees into it. A puff or two of smoke will cause them to run into the hive, and in a few minutes they will be comfortably settled in their new home. The reason newspaper is recommended for shaking the bees on is the readiness with which the queen may be seen. Should the queen be left on the ground by accident the bees would not remain in the hive, but would return to the parent stock.

If the bee-keeper is at all nervous about shaking the bees down in front of the hive, the same end may be obtained by removing three or four frames from the middle of the hive and shaking the bees into the open space. Place the quilt over the tops of the frames as quickly as possible, and after the bees have settled down and clustered between the frames the combs that were removed may be replaced. We prefer placing the swarm in their permanent position as soon as possible, as the bees commence working at once.

Some bee-keepers delay the operation till evening. The plan, however, is not recommended, as for several days afterwards bees may be seen returning to the spot where they were first hived. If they are lost much valuable time is wasted. Bees at this season, when honey is coming in freely, will often carry their stores into other hives, and are not molested.—AN ENGLISH BEE-KEEPER.

GROUPING PLANTS IN BORDERS.—Some of the most effective groups for a hardy plant border which I have had for early flowering this year are the following:—1, Strong plants of *Doronicum plantaginifolium* excelsum profusely flowered, arising from a groundwork of *Myosotis alpestris*, which extends well beyond the *Doronicums*, and is also abundantly flowered. This has had an excellent appearance, and been much admired. 2, *Narcissus poeticus ornatus* on a foundation of *Cliveden Purple Pansies*: this is still attractive, as well as another of a similar character, but with deep blue Pansies. 3, The finely variegated and well-known Grass *Phalaris arundinacea*, associated with the blue ordinary variety of *Iris germanica*, placed a foot or more apart, constitutes another handsome but simple bed. Groups of this kind impart much interest to extensive borders.—L.



•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Packing Peaches and Nectarines (W. Raby).—The issue containing the article by "Market Grower" on this subject is out of print. We therefore reproduce it on page 475, as it contains information that will be of service to many readers besides yourself.

Peach Leaves Spotted (Tyro).—The leaves are spotted as if with the sun acting on them whilst wet, as the scorching is different from that caused by fumigation. It has been favoured by insufficient ventilation, the ventilators not being opened early enough in the morning, or the openings not enlarged sufficiently early to allow of the pent-up moisture escaping, and that on the foliage heating correspondingly with the surrounding air. More air and earlier is the only means of avoiding the evil, but it also arises from the foliage being thin in texture, partly due to an unsatisfactory condition at the roots and in part to keeping too close and too moist in the early stages of growth. There is no disease of an organic nature.

Tomato Affected with Scald (A. H. E.).—The fruit is affected by the scald or black stripe fungus, *Macrosporium lycopersici*, which cannot be remedied, as the disease is wholly internal, though it may be prevented by a free admission of air, constantly allowing a circulation, and maintaining a rather warm and dry atmosphere. This procedure has proved the most satisfactory, together with using a little sulphur on the hot-water pipes which gives off faint fumes, yet sufficient to arrest the germination of the fungus spores. Some, however, consider that it is the comparatively dry and freely ventilated atmosphere that gives the immunity from the "scald," the moisture on the fruit giving the fungus the advantage, if not actually causing the "scald," and the parasite takes possession. However that may be, the fungal mycelium is active in the flesh, hence we advise affected fruits to be removed and burnt, and the house to be kept drier, warmer, and more freely ventilated, especially in the early part of the day.

Apple Trees Unsatisfactory (Loughfall).—The portion of small branch and the twigs are in a very bad state, being overgrown with moss, lichen, and saprophytic fungi. There is no wonder the blossoms are small and the fruit has not set. There appears to have been abundance of bloom, showing the trees not to be in a bad state constitutionally, but only requiring a chance. We should wash them thoroughly with lime water, made by slaking a peck of lime and pouring in 30 gallons of water, stirring well up, and leaving three or four days, then using the clear water. It may be syringed over the trees, and will do something to retard the overgrowths. In the autumn, as soon as the leaves have fallen, dust the trees all over with freshly burned slaked lime, choosing a time when they are damp with mist or after drizzling rain, but with a prospect of fair weather. Make the trees quite white. It will not hurt anything but the moss, lichen, and fungi, and that going on the ground will do much good to the soil, which would be the better for a dressing with farmyard manure at the rate of 20 tons per statute acre, leaving on the surface if the orchard is in grass, or pointing in lightly if bare soil. In addition to that, apply a mixture of bone superphosphate and kainit in equal parts, mixed, using 7 lbs. per rod, 10 cwt. per acre, and leave on the surface if in grass, or point in very lightly if bare soil. Then in the spring, as soon as buds begin to swell, apply $1\frac{3}{4}$ lb. per rod of nitrate of soda, which the rain will wash in. This will make a great difference in the trees, and draining being attended to, if needed, should give good results in the future.

Incarvillea Delavayi (J. C. S.).—The price ranges from 1s. 6d. to 3s. 6d. per plant. It may be procured from Messrs. T. S. Ware, Ltd., Tottenham; Barr & Son, Covent Garden; Dicksons, Ltd., Chester; and others. You may be sure of getting satisfactory stock from either of the above.

New Growths of Raspberries (O. F.).—The rootstocks must be allowed to send up new growths or suckers at this season, but they should be thinned out, leaving four to six of the strongest young canes to each stool or rootstock, and the best situated near thereto, removing the other by pulling up, if possible, without prejudice to the parts retained, otherwise they should be cut off. This will give you good bearing canes for another year, if those which bear fruit this year are cut away as soon as the crop is gathered.

Pinching Chrysanthemums (Lancs.).—As the plants are very forward it would be advisable to top them now, and thus rely on the breaks for the buds for taking, or the generally better plan would, perhaps, be to await the first break, then take out its point and rely on the three breaks (topmost) for the buds, removing the others. This would be likely to meet your requirements, though as you practise in a northerly district the pinching would give second break buds somewhat earlier and be the better practice. This is matter for judgment.

Begonia Leaves Disfigured (T. W.).—Yes, the leaves are infested with "rust" parasite, a small creature somewhat resembling a thrips, but far more injurious in its effects. It may be eradicated by frequent vaporisation with nicotine or fumigation with tobacco paper; also by spraying the plants with nicotine essence, one part in 100 parts rain water, or tobacco water. The spray, readily done with an atomiser, should be directed against the under side of the leaves. The parasite has also been overcome by dusting the plants, held upside down, with tobacco powder, using very lightly and repeating occasionally.

Duke of Buccleuch Vine Leaves (H. T. H.).—Beyond slight evidence of scorching near the edges of the smaller leaves, owing, no doubt, to the lodgement of moisture between the lobes during the early stages of growth, there is nothing but pleasure to be derived from an inspection of the specimens. The large leaf is, from its substance and colour, one of the finest we have seen. The few white specks are movable particles which have no doubt fallen from the woodwork of the roof. With a continuation of good culture, by which alone such foliage could be produced, you may, by appropriate pruning, expect good crops and fine specimens of the noble Duke. The small shrinkages of the margins of the small leaves are not uncommon, and may be regarded with complacency under the generally encouraging circumstances.

Stephanotis Unhealthy (H. C. T.).—The most probable cause is defective root action, which may have been induced by the soil being too regularly moist or wet, through the pot occupying a position underneath a stage, on which there are Ferns and various foliage plants, the drainage water from these rendering the soil sodden and sour. It is possible also that the means adopted to free the plants from a "little scale and mealy bug" may have had a prejudicial effect. Such failures, however, are not infrequent after "a mass of bloom," the plant requiring a time to recuperate. We should attend without delay to the condition of the plant at the roots, and if the soil is at all defective repot, using a compost of turfy loam, with a little leaf mould, a free admixture of sand, and a few pieces of charcoal, providing good drainage. Water should be given very carefully or sparingly for a time, never overwatering, but encouraging growth by lightly syringing twice a day. It would also be advisable to cut the plant back, removing the weakly shoots, and encourage vigorous growth by shortening the long and straggling branches.

Liquid Manure for Camellias in Tubs and Pots (Idem).—The liquid is best given when the plants are swelling their buds for flowering and when making new growth; the best we have used is that of sheep droppings, 1 peck to 30 gallons of water, and cow manure 1 peck to 20 gallons of water. The droppings or manure should be scalded, forming into a puddle, then adding the remainder of the water and stirring well, or the material may be placed in a bag. It is desirable to use the clear water only, which will have the colour of ale, and may be used as in ordinary watering. Clear soot water is also good, about half a peck sufficing for 30 gallons of water. It is not advisable to give liquid manure after the buds are set, or stimulate too much, otherwise the plants grow more than is favourable for flowering. The roots must, of course, be quite healthy.

Patchy Lily of the Valley Bed (J. C. S.).—Instead of digging up the bare places, putting in some manure and fresh plants, then covering over with leaves, it would be better to dig up the whole bed in the autumn, separate the plants, with as much root as possible attached to each crown, into sizes, and replant after well manuring the ground and stirring well, but firming the soil again before planting. It would also be advisable to form the beds on fresh ground, preferably with an east or west aspect. In planting a shallow trench should be cut out, the crowns placed upright in it, about 2 inches apart, so that their points are just below the surface, and the soil filled in. Other trenches may then be prepared and planted in a similar way, leaving a space of about 9 inches between them. By leaving out every sixth row beds would be formed, the alleys being handy from which to attend to the plants for weeding and watering. If the crowns are separated into three sizes and planted in separate beds, the small will produce nothing but leaves the following year. From the second size some flowers of medium strength may be obtained. The large ones will for the most part flower, and thus you will secure more satisfactory results another season, and in the following years all will give good returns under liberal treatment.

Fraxinus Ornus (W. B. R.).—This is the name of your specimen, which is also known as *Ornus europea*, and has been popularly designated the Flowering Ash and the Manna Tree. In Dr. Hogg's "Vegetable Kingdom" we find it referred to thus:—"From *Ornus europea*, the Flowering or Manna Ash, the substance called manna is obtained. It is the concrete juice which exudes after wounding the bark. The trees grow spontaneously in Italy and Sicily, whence the finest manna is brought. Manna is a gentle tonic, usually operating mildly, but in some cases produces flatulence and pain."

Does the Stench of Rotten Turnips Affect the Foliage of Vines? (*Vitis*).—We have no experience on this particular point, but we have known the stench from a heap of decayed Brassicas seriously affect Plum trees, Figs, and even Vines in houses to the eastward of the putrefying mass when the wind has been in the west. The gaseous matters evolved were believed to have had the result named, for the foliage was more or less blackened, as if from an overdose of ammonia vapour arising from fermenting materials, and the Vines had every appearance of attack from "browning," the parasite known as *Plasmodiophora* or *Pseudocominis vitis*. It is likely that the stench may have produced the "browning" or given rise to that condition favourable to the parasite, which is a phase of the subject not altogether at variance with the circumstances under which the micro-organism manifests itself.

Narcissus and Daffodil Bulbs after Flowering (*M. S.*).—The foliage should not be cut off when green, but allowed to die naturally each year, and then be removed. It is a bad plan to "dig up the bulbs yearly and dry them in the sun during July and August." The bulbs ought not to be disturbed except for transplanting or division, which operations are best performed shortly after the foliage has died down, as the roots of the bulbs are dormant, and the earlier they are planted again the better. Deferring lifting for the purpose of increase, or to prevent overcrowding until September or later in autumn, causes more or less injury to the new growth. Except for the purposes named permanent clumps should not be lifted so long as the plants grow vigorously and flower freely. At the same time it must be remembered that overcrowding, sooner or later, weakens the flowering of the large bulbs. It is good practice to give an annual top-dressing of loam and decayed manure when the dead foliage is removed.

Grapes Infested with Mildew (*J. D.*).—When the mildew affects the berries and has got a good hold they may be regarded as ruined, and the fungus, especially the form known as *Oidium balsami*, hard to kill. The fumes of sulphur are the most effective, and we can only account for their inefficacy in your case by the hot-water pipes not having been heated sufficiently for giving off sulphur vapour; it is necessary that they be heated from 170° to 200°, and kept so for at least an hour, and the house kept close for that time to retain the fumes, and then the structure should be well aired. Flowers of sulphur dusted on the borders has also proved effective. In case it is used the sulphur must, of course, be washed off before the Grapes are sent to table. Another useful application is prepared by boiling 1 lb. each of flowers of sulphur and quicklime in a gallon of water (not counting that used for slaking the lime and forming a paste with the sulphur) for a quarter of an hour, constantly stirring while it is boiling, then allowed to settle, and the clear liquid poured off for use. The Vines should be syringed with a mixture of this preparation with ninety-six times its bulk of water (1 gill or a quarter pint to 3 gallons of water), and in ten minutes afterwards the Vines must be thoroughly syringed with clear water. Probably the attack is due to ill-ventilation, the Orchids being more considered than the Vines, which require very careful attention in that respect to avoid the pest in some situations.

Names of Plants. (*Ignoramus*).—1, a *Funkia*, but the varietal name can only be distinguished with the aid of flowers; 2, *Saxifraga granulata flore-pleno*; 3, withered, probably *Cheiranthus alpinus*. (*V. W.*).—1, *Odontoglossum Pescatorei*; 2, *O. crispum*; 3, *Oneidium varicosum*; 4, *Cypripedium Lawrenceanum*, poor form. (*R. S. R.*).—1, *Styrax japonica*; 2, *Cytisus scoparius Andreanus*; 3, *Choisya ternata*; 4, *Cytisus præcox*. (*H. F. W.*).—1, *Tiarella cordifolia*; 2, *Amelanchier botryapium* (the Snowy Mespilus); 3, *Spiræa confusa*; 4, *Papaver orientale*; 5, *P. bracteatum*; 6, *Geum Heldreichii*.

COVENT GARDEN MARKET.—JUNE 7TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ...	1	3 to 3	Lemons, case ...	30	0 to 60
Grapes, lb. ...	1	6	St. Michael's Pines, each	2	6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	1	6 to 3	Mustard and Cress, punnet	0	2 to 0
Beans, ½ sieve ...	0	0	Onions, bushel ...	3	6
Beet, Red, doz. ...	1	0	Parsley, doz. bnchs. ...	2	0
Carrots, bunch ...	0	3	Parsnips, doz. ...	1	0
Cauliflowers, doz. ...	2	0	Potatoes, cwt. ...	2	0
Celery, bundle ...	1	0	Salsafy, bundle ...	1	0
Coleworts, doz. bnchs. ...	2	0	Scorzonera, bundle ...	1	6
Cucumbers ...	0	4	Seakale, basket ...	1	6
Endive, doz. ...	1	3	Shallots, lb. ...	0	3
Herbs, bunch ...	0	3	Spinach, pad ...	0	0
Leeks, bunch ...	0	2	Sprouts, ½ sieve ...	1	6
Lettuce, doz. ...	1	3	Tomatoes, lb. ...	0	4
Mushrooms, lb. ...	0	6	Turnips, bunch ...	0	3

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	1	6 to 2	Lily of the Valley, 12 sprays	0	4 to 1
Arums ...	3	0	Marguerites, doz. bnchs.	3	0
Asparagus, Fern, bunch...	2	0	Maidenhair Fern, doz.	4	0
Azalea, white, doz. bnchs.	3	0	bnchs. ...	4	0
Carnations, 12 blooms ...	1	6	Mignonette, doz. bunches	4	0
Daffodils, single yellow,	0	6	Narcissus, doz. bnchs. ...	1	0
bch. 12 blooms ...	0	6	Orchids, var., doz. blooms	1	6
Daffodils, double, bunches	0	4	Pelargoniums, doz. bnchs.	4	0
Eucharis, doz. ...	2	0	Paeonies, doz. bnchs. ...	4	0
Freesia, doz. bnchs. ...	2	0	Roses (indoor), doz.	2	0
Gardenias, doz. ...	1	0	Red, doz.	2	0
Geranium, scarlet, doz.	4	0	Tea, white, doz. ...	2	0
bnchs. ...	4	0	Yellow, doz. (Perles)	2	0
Hyacinths, Roman, bunch	0	4	Safrano, doz. ...	2	0
Iris, per doz. bunches ...	6	0	Smilax, bunch ...	3	0
Lilium Harrisi, 12 blooms	3	0	Tulips, bunch ...	0	4
longiflorum, 12 blooms	4	0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Foliage plants, var., each	1	0 to 5
Aspidistra, doz. ...	18	0	Fuchsias, doz. ...	4	0
Aspidistra, specimen ...	5	0	Heliotropes, doz. ...	4	0
Boronia ...	12	0	Hydrangeas ...	6	0
Crotons, doz. ...	18	0	Lilium Harrisi, doz. ...	12	0
Dracæna, var., doz.	12	0	Lycopodiums, doz. ...	3	0
Dracæna viridis, doz. ...	9	0	Marguerite Daisy, doz. ...	6	0
Erica various, doz. ...	9	0	Myrtles, doz. ...	6	0
Euonymus, var., doz. ...	6	0	Palms, in var., each ...	1	0
Evergreens, var., doz. ...	4	0	specimens ...	21	0
Ferns, var., doz. ...	4	0	Pelargoniums, scarlet, doz.	4	0
small, 100 ...	4	0	Solanums, doz.	6	0
Ficus elastica, each ...	1	0	Stocks ...	4	0

Bedding out plants in variety from 3s. doz.



A SOUTH AFRICAN INDUSTRY.

AFRICA; so vast, so huge, so unknown! Ask the average man or woman what he or she can tell you of that great continent. The answers will be short, and mixed—missionaries and blacks, elephants and lions, explorers and miners, intense heat, sharp frosts, high mountains, belts of swamp, Dutch vrows, Portuguese traders, yellow fever and rinderpest, our choicest exotics growing wild, 2s. 6d. the price of a good Cabbage, Oranges for the asking, rushing rivers with golden sands, parching deserts, the glittering diamond and sudden death, President Kruger and Cecil Rhodes—all these subjects would be mentioned were questions of Africa demanded from a room full of people. Yet how little we know of it; possibly some one province is familiar as the adopted home of a dear one; but still, unless that friend is a clever word painter, from his letters we can get but a poor impression of his surroundings.

Though the African day is hot, yet night and early morning are often piercingly cold, so cold, indeed that waggon bullocks will succumb, as Rider Haggard says, from "frost at the heart." Though African deserts are many, yet fertile plains are plentiful too, and some districts are exceedingly well watered. Big game, owing to ruthless harrying, is disappearing before the white man, being driven far into the interior; but the grassy plains are tenanted and support a vast multitude of sheep and goats.

South Africa does not confine itself to one variety of sheep; there is the native and also the imported. The native, as is usually the case in hot countries, is clothed with hair rather than wool, and is noted for its fine caudal appendage, which will often weigh up to 12 lbs. This tail is juicy and fat, and produces a most delicious substitute for butter in the eye of the old Dutch folk; indeed, some people prefer the flesh of the hairy variety to that of the more delicate wool-bearer. The skin of the former is in much request, from its toughness, by bookbinders.

It was in 1790 that we have the first record of woolled sheep in S. Africa, and they were introduced by Colonel Gordon, being the

gift of the King of Spain to the Dutch Government. After we got possession of S. Africa at the beginning of the present century we, as a government, did our best to promote the wool industry, but like many other matters forced on the people by Government, the experiment resulted in failure. People will not be forced against their inclination, and it is fair to suppose those African farmers knew their own business better than a paternal Government knew it for them.

As long as there was labour to be had cheap and plentiful, so long were other branches of agriculture the staple of the country—it was only after the slaves were freed, and the necessity of doing with fewer hands was forced on the farmers, that they turned their attention seriously to the sheep industry. English settlers led the van, and after many preliminary trials hit upon the right sort of sheep most suitable to the climate.

Here as in S. Australia it is necessary to constantly have recourse to new blood from home. The wool goes back to the original hairy texture and loses its true character.

In England more harm is often done to sheep by a too excellent pasture than by one that looks to the unlearned almost bare. By nature the sheep prefers a short, fine, and scanty herbage, and thrives where other stock would pine. Where sheep do the best in S. Africa is where the land will only carry half a sheep per acre. The food that suits them best is the Karoo bush or sweet veldt, so that the best sheep runs are found in the Karoo districts. The plateau covers an area of one hundred thousand square miles, and carries about six million woolled sheep, two millions of "fat tail," and numberless horses, cattle, and goats.

This Karoo bush is a grey green shrub about 8 to 10 inches high, and will grow in regions too dry for grass. As sun does not kill it, neither will frost injure it, so therefore it is available for fodder winter or summer. The reason for its tenacity to life will be found in the extreme length of its roots, which will reach the moisture sooner or later. It must be in character somewhat like the Kidney Vetch (*Lotus corniculatus*), that was at one time in so great demand for the blowing sands of Norfolk, and for other districts where the soil was thin, and ordinary seeds soon "gave up" if the summer came unusually hot and dry.

For this wool there are two harvests in the year (we wonder if clipping by machinery has yet been introduced)? The sheep are washed before clipping as here, and the wool is again washed before being baled at the port of embarkation. This second washing is quite a business to itself, and is carried on at Uitenhage, near Port Elizabeth and King Williamstown.

The Western provinces send their fleeces to Tulbagh Basin. After being washed, it is dried by rotary machinery and compressed into as small compass as possible, with a view to the next stage—i.e., a long sea voyage. It can easily be imagined what power the African sun must have on the drying, or rather bleaching wool; no fuller's soap could have better effect. The chief ports of embarkation are Port Elizabeth for the Free State and Transvaal wool; E. London, Cape Town, Mossel Bay, and Port Natal also export large quantities.

There are difficulties, and great difficulties, for the sheep breeders to contend against. The first is the existence of a tiresome plant of the burrweed type, *Xanthium spinosum*. This burr if it gets entangled in the fleece is perfectly hopeless, and simply ruins its value entirely. Where the plant has come from, for it is not indigenous to Africa, no one knows; when it will be eradicated no one knows, either.

The next enemy we know something of by dire experience—scab; but not the mild English variety, a nice tropical plant that flourishes well in this hot climate. We almost think it might be cured in time, but the Compulsory Scab Act that now exists must be drastically enforced.

Our English chemists have so many and so good remedies, and withal so reasonable, that we think it might be done. But until the farmers themselves are alive to the possibilities of cure not much good can be done. Let them be their own inspectors, convince them that it is a preventible disease, and give them a free hand in the enforcement of pains and penalties, and the thing might soon be done. A

sparse supply of water has been urged as a reason for not dressing sheep. We believe in the efficacy of fatty matter as the vehicle for drugs. We think it is more searching and more certain than water dressings.

There is great complaint, too, about mortality among lambs, and the general delicacy of the flock. That, it appears to us, will in time diminish. It will be a case of the survival of the fittest, and the general stock will become hardier and stronger, and possibly, too, means will be found to prevent such great mortality among the lambs. It is wonderful what a bit of science will sometimes do, and the value of a new food at a critical time of life is often little short of miraculous. We have taken our facts from an interesting article in April's "Windsor," from the pen of Mr. James Cassidy.

WORK ON THE HOME FARM.

Fine weather has set in at last, and appears likely to continue. We are now, therefore, busy sowing Turnips and Swedes, for the land which is put in at once is much the most likely to bring a good crop. At any rate it is working beautifully now, and there is nothing like getting on with work whilst the conditions are favourable. There is abundance of moisture, and a Turnip crop should now be a certainty.

We see nitrate of soda is advocated as a good manure for Swedes, and to a lesser degree for Turnips. We can only say, that from the lessons taught by experience we do not think nitrate is a good thing for the Turnip crop—i.e., in the majority of cases. If it is used at all, it should be in very limited quantity. We have tried various dressings, from 56 lbs. per acre to 224 lbs., in conjunction in all cases with superphosphate and potash; also as an addition to farmyard manure.

Our object in using nitrate was to obtain quickly a strong robust plant. Contrary to expectation we found that the heavy dressing rather checked growth than otherwise; the young leaves were a very dark green, but they did not make rapid progress. Later on in the season they grew well, and developed a large top; but we could not see any increase in the weight of roots in this way over those grown with manure and superphosphate alone, or produced with super and bonemeal.

One thing we did discover, that the Swedes assisted (?) by the nitrate were not of so good a shape as those grown without it, and that they were very much affected by canker, so much so that many of them became quite rotten and useless before they could be consumed.

The experience of a neighbour was exactly the same as ours, though his Swedes were grown on good limestone, whilst ours were grown on weak sand. *Experts crede!* Keep the nitrogen for the grain or Potato crops.

The ewes have been clipped since our last. The wool weighs fairly well, as it generally does after a mild winter, but there is a large proportion of cotted fleeces. As the wool buyers are only offering 9s. per stone for good wool, they will almost wish to beg the cotts.

Surely something must be wrong when good English wool will only fetch 7½d. per lb. Blankets ought to be cheap.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899. May and June.		Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	.... 28	30.480	54.3	47.8	N.W.	50.0	63.6	37.2	114.9	33.0	—
Monday	.... 29	30.441	55.7	48.9	N.	51.2	68.0	38.8	111.8	35.3	—
Tuesday	.... 30	30.409	52.6	49.7	N.	53.4	68.1	41.1	95.2	38.3	—
Wednesday	.. 31	30.364	61.9	51.2	S.	53.0	74.2	42.3	113.1	38.1	—
Thursday	.. 1	30.250	68.3	58.3	S.E.	54.6	80.1	46.8	121.4	42.1	—
Friday	..... 2	30.104	75.0	59.8	S.	57.1	83.7	56.2	127.9	51.8	—
Saturday	.... 3	30.216	64.9	55.1	N.E.	59.1	77.2	51.0	110.0	46.3	—
		30.323	62.0	53.0		54.1	73.6	44.8	113.5	40.7	—

REMARKS.

28th.—Bright sun almost throughout, and clear night.
 29th.—Generally bright and sunny, but cloudy for a time in afternoon.
 30th.—Sun almost throughout, but faint owing to thick haze.
 31st.—Hazy early, bright sun all day.
 1st.—A warm, clear summer day.
 2nd.—Bright and warm, threatening looking clouds in afternoon.
 3rd.—Warm and sunny, but a little hazy.
 A rainless and sunny week, but much haze. Shade maxima high in the second half, but mean temperature not much above the average.—G. J. SYMONS.

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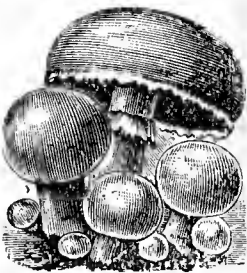
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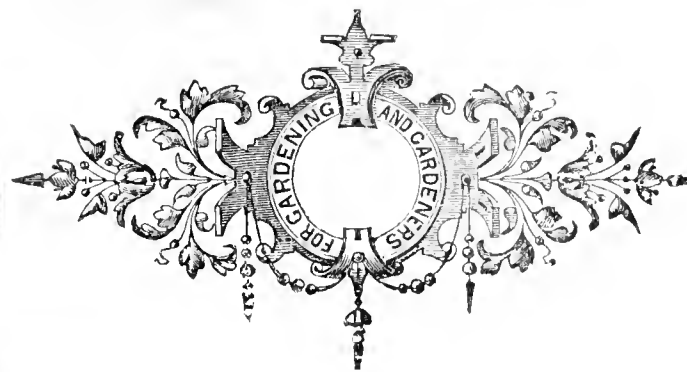
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Journal of Horticulture.

THURSDAY, JUNE 15, 1899.

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SOIL DEPLETION BY THE GROWTH OF FRUIT TREES.

THE fruit grower, whether he produces for home consumption or for market, having secured fruit trees, Vines and bushes, suitable for the purpose he has in view, will find it greatly to his advantage to study the food requirements of the trees he cultivates, not only for the purpose of adding to the fertility of the soil, but in order that he may restore the elements of plant food extracted from it by the crop grown.

Horticultural and chemical science has thrown much light in recent years on the question of manures, and in the research of the requirements of cultivated plants in the garden, the orchard, and the conservatory, that we are able with a degree of certainty, for every 20s. spent in suitable manures, to expect a remunerative return for the outlay.

Few soils can do without manure of some sort in order to yield a maximum crop, whether it be of vegetables, fruits, or flowers. Some, however, are if anything too rich and too forcing for the purpose of fruit growing, and would induce an extravagant growth of stems and leaves to the detriment of the fruit. Such soils usually contain an excess of nitrogen and lime, with a deficiency of potash and phosphoric acid.

Plants, in order to live and fructify, require certain elements of plant food, some of which are supplied by the air and some are found in the soil. Those supplied from the air are combinations and compounds of carbon, hydrogen, and oxygen; they constitute with the compounds of nitrogen and sulphur, which in the case of fruit trees is obtained from the soil, the organic part of the plant, which on combustion, either by fire, fermentation, or putrefaction, returns entirely or partly to the air as gases.

The mineral part of the plant, which is represented by the ashes left behind after complete combustion by fire—as the ash of tobacco or of a cigar—constitute the inorganic constituents, which consist of potash, phosphoric acid, lime, magnesia, silica, soda, sulphuric acid, chlorine, and others.

No. 2640.—VOL. C., OLD SERIES.

In order to determine, as far as possible, the amount of fertilising ingredients taken from the soil by young and old Apple trees and their fruit, a series of investigations has been made by Prof. Roberts of the New York Cornell Experiment Station, of which the following is a summary.

In October the leaves were picked from a thirteen-year-old Wagner Apple tree, from 18 to 20 feet high, and analysed. The total weight was 33½ lbs., consisting of water 16 lbs. and dry matter 17½ lbs., or 52.02 per cent. of the total weight. The dry matter was found to contain nitrogen 1.85 per cent., phosphoric acid 0.48 per cent., and potash 1.76 per cent. In other words, nitrogen 0.29 lbs., phosphoric acid 0.08 lbs., and potash 0.28 lbs.

The year after this analysis of the leaves the tree bore 5 bushels of Apples. The average composition of the Apples is given as water 85.3 per cent., nitrogen 0.13 per cent., phosphoric acid 0.01 per cent., and potash 0.19 per cent. Assuming that for five years there would be borne 5 bushels of Apples annually, that in the next five years 10 bushels annually, and for the succeeding ten years 15 bushels, the following table shows the estimated amount of nitrogen, phosphoric acid, and potash that would be taken from the soil in twenty years by an acre of Apple trees set 35 feet apart, or a total of 35 trees.

FERTILISING MATERIALS TAKEN FROM THE SOIL IN TWENTY YEARS BY AN ACRE OF APPLE TREES.

		Apples.	Leaves.
		lbs.	lbs.
Nitrogen	...	498½	456½
Phosphoric acid	...	38½	126
Potash	...	728½	441

The figures speak for themselves, and show the importance of supplying sufficient and suitable manures to the soil to restore the fertilising materials taken by the trees, and urge the necessity of constant manuring of orchards and fruit trees if paying crops are to be maintained.

An old Apple tree of the variety "Seek-No-Further," practically past bearing, was taken up, weighed and analysed. The composition was as follows:—

COMPOSITION OF THE DIFFERENT PARTS OF AN APPLE TREE.

	Leaves.	Twigs 2 years growth.	Limbs and Trunk.	Roots.
	lbs.	lbs.	lbs.	lbs.
Total weight	232	438½	3972½	840½
Water	139½	218½	1656½	424½
Dry matter	92½	219½	2316	415½
Nitrogen	1	2	5	1
Phosphoric acid	1	½	2	½
Potash	1½	1½	5	1

These results show that the tree, exclusive of roots, weighed more than 2 tons, of which about one-half was dry substance, the greater part being in the limbs and trunk. The tree contained in the above-ground portions about 8 lbs. of nitrogen, 3 lbs. of phosphoric acid, and 8 lbs. of potash.

A thrifty young tree of each of six varieties of Apples, Pears, Peaches, and Plums was analysed, the tops and roots being dealt with separately.

FERTILISING CONSTITUENTS REMOVED BY AN ACRE OF 3-YEAR-OLD FRUIT TREES IN POUNDS.

	Nitrogen.	Phosphoric acid.	Potash.
	lbs.	lbs.	lbs.
Apples	29	10	19½
Pears	24½	7½	14
Peaches	22½	5½	11½
Plums	19½	4½	11½

The result shows that nursery fruit stock removes from the soil only a small amount of fertilising materials as compared with that taken by other garden crops. The usual failure to raise nursery stock with success continuously on the same land is believed to be due to the fact that the readily available fertilising elements have been exhausted by the rapid growth of the fruit stock, and to the fact that the ground is not always cultivated when it is in the best condition.

Lime is known to be a very necessary addition to many soils, as it is a chief ingredient in the ash of fruit trees, though scarcely noticeable in the fruit itself.—J. J. WILLIS, *Harpenden*.



ODONTOGLOSSUM CRISPUM ARTHUR BRISCO.

THE varieties of *Odontoglossum crispum* that were sent from private and professional growers to the Temple Show on the 31st ult. were of excellent average quality and very numerous indeed. We now give in fig. 107 a representation of one named Arthur Brisco that was contributed by Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, for which the Orchid Committee of the Society recommended a first-class certificate. It is a flower of exceptional beauty and merited the admiration that was bestowed upon it by the crowds of visitors. The ground colour is pure white with large and regular crimson brown spots and blotches distributed over the several parts of the whole flower, of which the form is elegant. It is a variety that well maintains the reputation of the Walton Grange collection.

SACCOLABIUM CELESTE.

BLUE being a rare colour amongst Orchids, every species that produces such flowers is acceptable and useful. Although the flowers are not large the spikes are decidedly attractive, and a good plant is



FIG. 107.—CYRTOPIDIUM CRISPUM ARTHUR BRISCO.

very showy. Although *S. celeste* (fig. 108) hails from Siam, it delights in the temperature of an ordinary Cattleya house, and may be grown in perforated pans or baskets suspended in a shady, or partially shaded corner, using as compost live sphagnum moss. Care is essential in watering, as none must remain in the centre of the growth, or irreparable damage will occur; in fact water should only be given in very moderate quantities, especially if the situation occupied by the plant is a damp one.

VANDA DENISONIANA.

PROBABLY many of our readers will not be acquainted with this delightful Vanda, which is not nearly as much grown as it deserves to be. The plant is somewhat like a weak *V. tricolor* in habit, and the flower spikes appear in spring from the upper portions of the stem. Such beautiful white flowers they are, absolutely pure, and the three-lobed lip was likened by Professor Reichenbach to the tail of a black cock. *V. Denisoniana* may be grown with other Vandas in a fairly warm, moist, and shady house; and the roots not being so strong as those of the majority of kinds, the receptacle for them should be of medium size only.

Small baskets, such as are often used for single-stemmed plants of *V. coerulea*, suspended near the roof glass, suit it admirably.

Great care is necessary with the watering all the year round, but especially in autumn and winter, and the sooner the plants can be brought under the influence of light and air in autumn the better. It will consolidate their leaf tissues, and go a long way towards preventing the troublesome leaf dropping so common in *Vandas* in the spring months. This is more particularly noticed in newly imported plants, and others in their second year, the severe check the plants receive during their transit doubtless accounting in a measure for it, while in many cases the plants are collected at a wrong season of the year.

PLEUROTHALLIS ROEZLI.

The *Pleurothallis* are not popular Orchids, but whenever this pretty and distinct species is exhibited it is sure to be admired. The plant is interesting as having perhaps the deepest coloured flowers of any, and these hang downwards from an erect sheathed peduncle. The colour externally is a deep blood purple. *P. Roezli* may be grown in quite a cool house if kept well up to the light in winter and not dried off at the roots. It is a native of the New Grenadan mountains, and was discovered by the successful collector whose name it bears growing "on moss-covered blocks of granite in the neighbourhood of Sanson" in 1874.

AERIDES HOULLETIANUM.

This species used to be more frequently seen than at the present day, but it has never become at all popular. The plant is dwarf, the leaves broad and handsome, and the yellowish flowers, each segment tipped with rosy purple, are very distinct and pretty. Like many others from the hill country in Burmah *A. Houlettianum* does not like a close muggy atmosphere, and though delighting in ample heat and moisture, this must be tempered by allowing plenty of fresh air on all possible occasions. The baskets should be small in comparison with the size of the plant, and good sphagnum and charcoal suffice for the compost.

LAELIA GRANDIS TENEBROSA.

Many hundreds of plants of this pretty *Laelia* have been imported within the last few years, and though unknown a decade or so ago, it has become one of the most popular in cultivation. And rightly, for we have all too few of these rich tints among our Orchids, and besides it is of the easiest culture, provided sufficient warmth is at command. It likes more heat and water, and a slightly drier atmosphere, here than the labiate *Cattleyas*, otherwise the treatment is identical, and the flowers are always plentifully produced as soon as the plants are strong enough.

I know of no other species or kind that will take as much water while the plants are being established as *L. grandis tenebrosa*. The pseudo-bulbs of *L. purpurata* and many others would be absolutely rotten if watered as much as this variety needs, and there is no doubt that many weak plants have been killed and strong ones weakened simply for want of moisture. Over and over again I have warned amateur growers against allowing too much moisture to newly imported plants of various kinds, but with strong specimens of this one they need have little fear, for unless given in inordinate quantity, it cannot harm the plants. When the roots are established in their compost it is different of course, as this holds the moisture longer, but even then a full supply is necessary when growth is active.

ODONTOGLOSSUM LINDENI.

Though a strong growing easily cultivated species, this is hardly to be recommended for general cultivation, being rather shy flowering. When it does bloom it throws up a tall spike containing a dozen or more flowers, each about 2 inches across, of a pale lemon yellow. A native of New Grenada, the cool house suits it well, and being strong growing the pots may be larger than usual, and the compost well drained and rough. The earliest recorded instance of *O. Lindenii* flowering in this country is in 1871, but it had then long been known to botanists.

DENDROBIUM JOHNSONLE.

This is an Orchid of many names, but undoubted beauty, and where it succeeds there is not a more chaste or lovely species in existence. The blossoms are large, and pure white, excepting a few purple markings about the lip, and indeed it is more like a fine white *Laelia* than a *Dendrobium*. It is worthy of every care, and although some of the plants that have been brought to this country were collected at the wrong time, and arrived in wretched condition, there is no doubt it will thrive under cultivation in course of time.

Coming from the neighbourhood of the Torres Straits it must be treated similarly to *D. phalaenopsis* and others from that part of the world, and everyone who has had experience with the class knows that regular conditions as to growth and rest cannot always be laid down. If the plants seem inclined to steady up a bit after flowering so much the better, but if, on the other hand, they start into growth, then the cultivator must follow this up with encouraging conditions of heat and moisture. Ample heat when growing is obviously necessary, and atmospheric moisture will prevent a check and attacks of thrips.—H. R. R.

GLOBE ARTICHOKE.

GLOBE Artichokes cannot be classed as one of the commonest vegetables in the gardens of this country, nevertheless they are much appreciated in some establishments. They are grown to a much greater extent in France than in England, owing no doubt to the more genial climate of that country. Moreover, not only are they much more abundant than Artichokes are in this country, but they are of thicker and more fleshy substance, and there is in consequence more of the toothsome morsel. The cultivated Artichoke is not a distinct species, but a derivative from *Cynara cardunculus*, the Cardoon. It is not found anywhere in a wild state, as we know it in gardens.

The Globe Artichoke can hardly be recommended as a suitable or profitable crop for cottagers, nor for those who only have small gardens,



FIG. 108.—SACCOLABIUM CELESTE.

and need them for more serviceable stock. In most private gardens, however, we find it, and in many it is greatly esteemed, as is the case here; in fact, next to Asparagus it is the favourite dish. In many gardens it does not receive the attention it deserves, as the stools are allowed to remain too long in the same position, with the result that the produce is not only undersized, but stringy, and inferior in flavour. The Artichoke may be grown as an annual, biennial, or perennial; we prefer the latter method. It is much the best to get a good strain, and maintain the supply by planting suckers annually or biennially, as when grown from seed there is such a large percentage of plants that produce inferior heads, although by growing a few from seedling plants the season may be much prolonged.

A moist, rich, deep, and well drained soil is essential, the least suitable being a very heavy one, as there is more labour in preparing it. As the plants may remain on the same spot for a period of four or five years, it is necessary to well prepare the situation in the first

place. The ground should be trenched, preferably in the autumn or winter, to allow it to settle before planting time in the spring, and must not be less than 18 inches or 2 feet deep. To accommodate one row of plants a width of 4 or 5 feet should be allowed, a quantity of good manure and wood ashes being well incorporated with the soil during trenching operations. Seaweed is a good manure, and is much used by those living near the coast.

The position allotted to the plants should be an open one, away from the influence of large trees. If a warm and sheltered border can be spared for a few plants, heads may be cut several days earlier than from those in a more exposed situation. In some gardens Artichokes are planted in odd corners and out of the way places, but the best results cannot be secured by this method. It is a better plan to have them all together where room can be spared, so that they can be more conveniently attended to in the matter of watering, cutting for use, and protecting from frost during the winter. In many gardens there are borders or narrow strips of ground outside the garden proper which may often be used for this purpose.

Planting should take place in March, when the weather is favourable. I am aware that this is earlier than many recommend, but I find the earlier planted grow stronger, as they get well established before the hot dry weather sets in. The usual way is to plant suckers from the old stools, selecting those that have abundance of fibrous roots, although almost any little piece will grow if there is a root at all. I have taken suckers as early as they could be obtained in spring, and established them in pots before planting, but have found little if any advantage by so doing. It is the practice of some growers to pot suckers in the autumn, protect in a cold frame during winter, and plant out in spring, and no doubt by this method heads may be cut earlier than from suckers detached in spring. They should not be planted less than 4 feet apart, and a little more room may be allowed between the rows.

It is advisable to put a stake to each plant, and tie the leaves loosely to it, which will protect them from being broken by strong winds and rain, until they become established. Should dry weather follow planting water must be given occasionally; a thin mulch of manure will also greatly benefit the plants. The only attention required during the summer is the frequent use of the Dutch hoe, with copious supplies of water in dry weather. The plants will then produce a succession of heads during later summer and well on into the autumn. In the case of established plants, when the protecting material is removed in the spring, a coating of manure should be given, and lightly dug in. Liquid manure may also be applied, and subsequently during the summer, for this crop well repays liberal treatment. A dressing of salt can be applied at the rate of 3 or 4 ozs. to the square yard at the time it is first applied to Asparagus beds, and occasionally during the summer. It need hardly be said that the salt is more beneficial on light than heavy soils.

If the plants have been properly cared for during the winter, small heads may be cut as early as the middle of May in a forward season. Last year our first cutting was on May 14th; in the south, no doubt, they may be ready earlier than this. This season they are much later. We have not yet any ready, the first week in June. It has been a cold spring, and all crops are correspondingly late.

For general purposes medium-sized heads are best. If, however, very large ones are required for exhibition or other purposes, the small lateral heads may be thinned. It is said to be the practice of some growers to twist a piece of wire round the stem about 3 inches below the head to increase the size, but not having tried the plan I cannot speak from experience. The heads should be cut as soon as they become of a serviceable size, as if allowed to remain long the plants are greatly exhausted. Artichokes will keep for some considerable time if laid in a cool place, although they will deteriorate in quality.

A few heads may occasionally be cut late in the autumn from established plants, but to get a plentiful supply as late as the middle or end of November it is best to grow a few plants annually from seed. It has already been noticed that the produce of the majority of seedling plants is inferior, the heads being very long and spiny, and the scales thin. All the same these weak points cannot be overlooked when by this method the season may be prolonged for several weeks and Artichokes may be had for nearly half the year.

The proper time to sow the seed is in February, in heat. As soon as the plants are large enough they must be pricked off into small pots. Perhaps a better plan is to sow two or three seeds in small pots, and as soon as it can be determined which is likely to make the best plant the others can be removed. They must be transferred to larger pots as soon as necessary, hardened, and planted out in May. The position should have been prepared some time previously. The plants may be put in singly at 2 feet apart, or in clumps of three at 4 feet asunder. Slight protection must be afforded from late frosts and cold winds, and for this purpose a few small half dead Spruce branches stuck in the ground will be suitable. Water should be given liberally in dry weather, as well as a mulching of manure. If the

season is favourable they will flower in the autumn and produce heads until the middle or end of November.

When the heads are all cut, the plants may be destroyed, or allowed to remain for a second year, when the produce will be much greater. If it is intended for plants to remain more than one year, it will be best to plant singly 4 feet apart, as seedlings grow very strongly the second year. It is generally known that the Artichoke is not hardy, and requires some protection during the winter. When this receives proper attention, the plants grow much better, and produce heads earlier. Some growers are in the habit of cutting off the outer leaves, but this I think is a mistake, unless they are decayed, or broken about so as to be of no use to the plant. One sometimes sees them cut off altogether, but this must greatly injure the stools, and retard growth in spring. Litter from the stables, leaves, bracken, and sometimes mats are used for protection. At one time I used litter, but found it anything but satisfactory. It may do very well where it can be changed occasionally or removed during a spell of mild weather, but if allowed to remain all the winter, heavy rains and snow saturate and weigh it down, which causes the plants to decay. For several years coal ashes have been used here, and I find them answer best, as well as being tidier.

When the heads are all gathered the stems are cut away; the plants then make fresh growth, which I try to preserve, if possible, through the winter. On the approach of sharp frost, a bank of ashes is put round each stool; to facilitate this operation, the leaves are loosely tied together. Should the winter be very severe, more ashes may be added. When they are removed in spring, be careful to clear all away, as it is not advisable to get them mixed with the soil, especially when it is of a light nature. Early in April will be soon enough to remove the protecting material.—J. S. UPEX, Wiggantherpe, York.

HARDY FRUITS—POINTS FROM PEARSON.

MR. A. H. PEARSON once upon a time read a paper at Nottingham, and the wise midlanders seem as if they would not willingly let it die. It was published in pamphlet form, and a copy of the third edition is sent to us—in case, as the author suggests, the hot weather leaves us with sufficient strength to say a word about it—not the weather, but the pamphlet.

There are people in the world, not a few, who appear to think lightly of "little things in paper covers," and who therefore bestow on them only a casual glance, then throw them aside like old newspapers. It is, at least in many instances, a mistake, for a good deal of sound sense and information may be compressed in a few pages presented in modest garb to the public. As by no means all or half of those who are interested in hardy fruit culture will read the score or two of pages under notice, and as the weather is cooler, and we do not remember reading the previous issues, we will consider a few points from the one before us.

PICKING AND STEALING.

It cannot be said that the first point is representative of the highest possible literary morality, but it is at least introduced by the expression of a good old truth—namely, "Much has been written on the subject of fruit culture." It has been said there are some critics who live to deny everything, but we scarcely expect to find one who will deny that pronouncement. The author of it, if author he be, for we think it may have been read a hundred times before, then goes on to say with innate midland modesty that he can hardly expect to say anything new on the subject, but thinks he might "make a nice paper"—note the "make"—and tells us how it could be done. It is delightfully simple and by no means new; it just amounts, we are told, to collecting "gleanings from the writings from others, for as some sly American wit has neatly said—

"He writeth best who stealeth best
Ideas both great and small,
For the great soul who wrote them first
From Nature stole them all."

Our author then proceeds—we do not say "accordingly," but rather to relate his experiences from Nature, art, and negligence in relation to fruit production, *plus*—and we ought to shudder as we write the terrible word and reflect on the law of libel—just a little stealing. "What! a honest midlander steal? It's an outrage; give proof, or into the Court you go, and an intelligent jury shall give redress." Be calm, Mr. Author, we have evidence the weight of which you cannot dispute—your own.

PLOUGHING AND PLOWING.

You tell us that when you first wrote the paper few people thought of planting an orchard and keeping the land in cultivation, and that you "rather" recommended grass orchards; but you have advanced in more ways than one since then, and are not very likely to lag behind. Still, as you say, grass orchards are yet the best in certain

cases, when established in the method described. They are most useful to farmers, but the majority of farmers cannot or will not give them proper, if any, attention in a young state, even if the trees are bought and planted for them, and the trees, though good to begin with, are in a few years torn, twisted, gnarled, miserable wrecks. There are, however, exceptions, and these are on the increase, especially in the chief fruit growing counties and some districts in the midlands. Keep on, Mr. Pearson, in teaching them better methods.

You are now "rather" in favour of cultivated orchard, always for a time, and sometimes continuously, hence you say space must be left, that the "plow" may not come too near them; also in preparing land you point out, for reasons stated, that the steam "plow" may be worse than useless. Now, from whence did you find that advanced word? Not from school, not from your honoured father, not from the *Journal of Horticulture*, not from a good old English dictionary. No, you have been profiting by the poetic teaching of which you cite an example, and stole the word from America, where the people are too busy to put in all the letters. Better stick to the English methods of spelling yet awhile, or when you contract a cold you may be cowing instead of coughing, and to be cowed is quite contrary to your courageous nature.

GIVING.

Quite the obverse of stealing is giving, and you make ample amends for the lapse in orthography when under the phonetic spell, in the good advice clearly given on the various items that cannot be overlooked if success is to be attained in fruit cultivation and distribution. You tell about preparing the land wisely, of planting properly—not omitting to explain that the "quincunx" arrangement of trees is "like five (of spades) on a pack of cards"—on pruning intelligently, manuring sensibly, sorting carefully, and marketing prudently; and, if what you give of your experience on these and other matters is taken and turned to account in the way you wish, growers will not fail to succeed in the production of what is ever in demand—superior fruit, but it *must* be "superior."

SAMPLES.

You have seen baskets of Apples or Plums sent to market with a fine layer of fruit on the top, "the would-be purchaser turns a few over, and finding a different sample underneath begins to thrust in his hands and shake up the fruit; finally, after spoiling its appearance he bids such a price as the smallest is worth, and ignores the larger sized." Of course he does: he would not be much of a buyer if he did otherwise. The marvel is that he is afforded so many opportunities to benefit himself at the expense of blunderers. He just sorts out the better fruit and sells it at thrice the price he gave for the lot, and has the small into the bargain. Well may the practice remind you of the old farmer who said, "When buying sheep don't look at the big ones, but keep your eye on two or three smallest, and buy, then you will be all right."

We rather like the idea of farmers only growing early Apples to be gathered and used, or sold, before harvest, such as Duchess of Oldenburg, Lord Grosvenor, Devonshire Quarrenden, and Worcester Pearmain, with a few Czar and Victoria Plums; but the bulk should be of late varieties, the fruit of which will hang on the trees till harvest operations are completed; or such Apples as Newton Wonder, Bramley's Seedling, New Northern Greening, and King of the Pippins, with Monarch Plum and Shropshire Damson. Another dictum about grass orchards is worth remembering, "Never mow an orchard, as nothing will ruin it more quickly." You might have added, But graze it, and get your friend Mr. Bunyard's three historic crops in one season—wool, mutton, fruit.

A STORY ON DEEP PLANTING.

Apropos of deep planting, the "funniest" story, you know, is that told you by a nurseryman who supplied a number of Cherry trees for a large orchard. Other trees were at the same time obtained from another source. These latter flourished, while the former dwindled. On the perplexed nurseryman visiting the trees he at the first glance failed to recognise his own, and said they could not have come from his nursery, as his trees had 6 feet stems, whereas none of those inspected had stems of more than 5½ feet. Investigation elicited the fact that "the planter had dug the holes for the taller trees half a foot deeper than for the others to *make them all level*."

To this "funniest" story on the subject we will add a funnier. A gentleman made a fine new kitchen garden, and had planted in it a number of fruit trees. Two or three years subsequently he engaged a new gardener—a thoroughly competent all-round man. All the trees flourished except a long row of bush or pyramid Apples along the side of the main walk. We were invited to inspect them. The owner described his gardener as "a capital man in everything else, but he could not grow Apples." Certainly the gardens were in splendid condition under glass and everywhere, but these particular Apple trees, large when purchased at an extra price, were in a miserable plight, with cankered stems and yellow leaves. The gardener said they were planted too deeply, but the owner averred they

were not, he had superintended the work himself, and would not have them lifted. He was told, however, rather firmly, there could be no inspection without seeing the roots, and he marched away. Digging commenced. No roots at 1 foot, 2 feet, 3 feet, but they were reached at last, such as they were. A searching investigation revealed the fact that the trees were standards, but the owner would have them made into dwarfs, "as they would look better and save stakes." He insisted on them being sunk to the outrageous depth necessary, and saw the work done. He was told he had done his present gardener an injustice. "Oh, then you have found me out, have you? Very well, my gardener shall not be bothered any longer, and I will raise his wages." His garden was a pleasure to him, and his gardener a trusted and valued servant to the end. Unfortunately the master is dead, and if Mr. Pearson can find a situation for one of the best of men, where gardening is cherished, and reasonable means provided for its prosecution, he will do better than entering an action for libel against the Editor for saying a "word" about his lecture on fruits.

ONIONS AND MAGGOTS.

Most of us enjoy seeing well-grown Onions, as they are shown at our leading exhibitions, and for this purpose the system of sowing seeds early in gentle heat and, after hardening, transplanting to the open ground, is to be commended. To that I do not object. The method is, however, often put forward as the only sure remedy against the Onion fly, as by this means it is contended the resulting plants are so strong at planting time that they are in themselves able to withstand attacks of this old foe of gardeners. Can the disciples of this doctrine explain away the fact that row after row of Tripolis have become simply lumps of corruption and nastiness? They were strong enough previous to infection.

Passing from this view of the subject, let us look at it from another standpoint. I demur to the universal recommendation of this policy of "boxing" on the score of economy. Think of the thousands of pounds which annually find their way "over the water" for Onions, and it is the market grower we look to for a solution of the difficulty. Will the latter be found in the wholesale sowing of seed yearly under glass? I say no; those who grow Onions to sell at a profit will not be led astray by the tenets of "Onionism."

For some years we have been able to grow the pungent bulb free from its great pest, in a garden which had previously been subject to serious infection, and I propose to give a short account of the manner in which this has been done. I claim to expound no startling theory, no new points of practice, but will give just a plain statement of facts.

It is not for me to strain the credulity of readers as to the weight of crop annually gained from a given number of perches. It suffices that we usually have a small surplus, of which there is no difficulty in disposing at a fair price. With us Onions usually follow late Peas, and as soon as possible after the latter are gathered we bastard trench the piece of ground it is proposed to use. With the bottom spit is incorporated all kinds of garden refuse, from which deep-rooting weeds are rigidly excluded, while a heavy dressing of farmyard manure is added to the upper portion of the land; the whole is well stirred, and then left for the winter.

As early in February or March as it is possible to obtain a good tilth, which all sound cultivators know is essential in sowing small seeds, these are sown. The ground is first well trodden, and afterwards ashes, hot from refuse fires, are spread over the surface, which is then well raked. The seeds are sown in shallow drills 10 inches apart, the rake being again brought into requisition in a light manner, and there is nothing more needed until the seedlings appear. As soon as these can be plainly discerned the Dutch hoe is run down the rows, and a light application of soot given. Ten days or a fortnight from this time an ounce of nitrate of soda, rather under than over that amount, is applied to the square yard. These two stimulants are used alternately until the Onions attain a fair size.

Some of the adherents of the "boxing" system may be tempted to exclaim, "Well! but this is the way to induce soft succulent growth, which is just the condition of affairs the Onion maggot delights in." I quite agree if the applications of nitrate are too heavy, but used in small quantities it will help the young plants to pass quickly out of danger, whilst the soot wards off the parent flies, and so prevents the deposition of eggs.

A word or two about varieties should be added. I have tried numerous sorts, and am bound to admit we have nowadays many good ones to select from: Ailsa Craig, A1, The Reading, Excelsior, and James' Keeping, not forgetting old Giant Zittau. But what will be said of my favourite by the admirers of the great, the massive, and the colossal in Onions, when I tell them its name? Would that it could be written in a whisper, but it must out—Bedfordshire Champion! Let the onionists, if I may call them so, say what they will, I have a staunch supporter in our west country "kitchen genius," who declares them to be "splendid oongyuns." No gardener need

desire greater praise than that for his products, and so long as our need is not in the direction of the exhibition tent and our crops keep clean, as they have hitherto done, so long will such results from the foregoing methods and the old "Champion" satisfy—J. SHALFORD.

SOME EUROPEAN VINEYARDS.

In a recent tour which took me through many Vine growing countries, I had the opportunity of noting the different methods of cultivation. As it was in the spring and before any growth had begun, the Vines were of course in their least interesting condition. Still this enabled me to see all the better the system of pruning and training which had been pursued. I make no mention in this article of the Vine in Southern latitudes. I have seen it on other occasions in Spain, Italy, the Riviera, Algeria, Egypt, and Palestine, but not being at the time so much interested in the culture of the Grape as subsequently, I did not regard it with the same appreciative eye.

To begin with France then, which was where on this occasion I entered upon my travels. I will instance the country round Aix les Bains as a fair sample of the vineyards of Savoy. This interesting old bath town, the Roman Aquæ Gratiannæ, can be extremely hot even at the end of March, for it was not yet April when, after an hour in the hot sulphur baths, I sallied forth for a good square constitutional to see something of the country round about. Whether it was the enervating influence of the bath, or really a burst of extreme heat (the sky was absolutely cloudless with an entire absence of wind), or both combined I cannot with certainty say, but this I know, I have never felt it hotter or my own good shanks' pony less inclined to do work. No, not even in India.

Hence it came about I found myself in a *dolce far niente* condition, and instead of doing a good climb up the mountains which hang over the fertile valley, and pretty well hem it in on every side, as part of my day's proceedings, it resolved itself into a kind of lazy loaf in and out of the vineyards and cultivated plots within a mile or two of Aix itself. After resisting the alluring suggestions, therefore, of an enthusiastic boatman to entice me for a row on Lake Bourget (a really fascinating piece of water), I set myself with what earnest I could summon in my (happily) unwonted torpid condition to inspect the Vines, revolving in my mind the while ideas of a visit to La Grande Chartreuse, which is within measurable distance of this part of Savoy. Trained almost entirely trellis-wise, and all last year's shoots forming this season's bearing wood, generally about 2 feet in length, they are tied perpendicularly straight down. Besides the ordinary trellis put up for the purpose, pollarded Poplars and Mulberry trees, pruned quite close, are much used for twining the Vines round.

In addition to the Vine I saw many other things here. I particularly noted in one little plot a man, a woman, and a child, all Potato planting. While one made the hole, another put in the tuber, and the third covered it up. All the peasants seemed so happy and gay, I could not help my thoughts turning homewards and thinking how little we have of this method and this spirit in our island home; how each year our so-called peasant seems less and less a peasant, even where he is not already almost an extinct species, such a *rara avis* in many parts has he become. Here the whole family were wrapt up in their little holding. There was petite culture of other kinds too, a nice amount of Peach, Pear, and Plum trees being in evidence on most of these plots. I also noticed patches of Indian Corn, which, judging by the old haulm which I saw about, does remarkably well.

But with these exceptions practically every inch of available ground was cultivated with the Vine. It was all very well in the fertile alluvial plain, but one marvelled how Grapes could be produced on the hill slopes in spots that appeared stony and barren of soil, with scorching sun and long periods of rainless drought to contend with. What a contrast to our style of cultivation, with Nature's copious draughts and the rich aid of frequent doses of liquid manure.

The Vines in Switzerland, of which I will take those round the Lake of Geneva as a type, are very different from the French cultivation just described. They were, at the time I saw them, the most unattractive-looking objects, mere stumps pruned quite close to the ground. Even in mid-April I saw no signs of their breaking. They are cut year after year very close to the old root of about half a foot in height, and two or three little rods of another 6 inches or so in length. I noticed a considerable area of Vines travelling through Hungary, and a certain amount in Servia.

The wine of the latter country I thought particularly good. At table d'hôte in Belgrád a clear decanter of either red or white wine is put before each place. Slightly heady, perhaps, and rather strong for a vin ordinaire, it struck me, nevertheless, as being both pure and invigorating.

As regards Bulgaria the culture appeared very rough. Here they

seemed pruned harder back than ever; one had to look very closely in the roughly ploughed fields to distinguish the little black stump among the clods of earth and almost level with the ground.

Travelling into Turkey, especially around Constantinople, the Vine was still to be seen, but to a great extent seemed to have given place to the Fig, which was at the time I saw it breaking into luxuriant foliage, while in Constantinople itself, another kind of Vine, the beautiful Wistaria, was in full bloom, huge growths trailing up and down houses, or making a shady bower or roof over some little Eastern gardens.—J. A. CARNEGIE-CHEALES.

NOTES ON TYDEAS.

TYDEAS, in my opinion, must be classed amongst the most beautiful plants that adorn a warm house. Even in summer they are delightful, and quite distinct from Achimenes. In autumn and winter they are invaluable, and the plants will flower profusely throughout the dreariest and darkest months of the year. They are easily grown, and when well cultivated they will produce their beautifully spotted flowers in succession over a great space of time.

In commencing the cultivation of these plants it is wise to obtain them while in a resting state, and by judicious care in starting some at intervals of a month a supply can be obtained through the whole year. It is difficult when first obtaining the small tubers to adapt them to winter growth. This difficulty can soon be overcome by keeping those required for late flowering at rest as long as possible, and in a season or two the whole stock can be started at any time. It is wise to keep the successions separate, either by labelling or otherwise, or some of those required first may be left, while those for late work may by mistake be potted earlier than intended.

In starting them into growth the small tubers can be placed either in the pots the plants are intended to bloom in, or they may be put in small pots, afterwards transferring them to others 5 or 6 inches in diameter, which are large enough for single plants. The plants do well on either system, but the latter is preferable, as the soil is not so liable to become sour before the pots are filled with roots. If the pots can be plunged in bottom heat so much the better, and the quicker will the tubers commence growth, although bottom heat can easily be dispensed with, and when growth is a little advanced they do as well without it. A temperature of 60° to 65°, regulated according to the outside temperature, is ample if increased as the season advances. During summer slight shade is beneficial on hot bright days, but excessive shading will cause them to grow weakly and flower unsatisfactorily.

As before stated, a few started every month will maintain an unbroken supply. Tubers potted at the commencement of the new year will produce flowering plants by the end of May and through June, and plants started at the beginning of May will bloom by the end of September and through the following month. In autumn and winter they are most useful, and to have a good supply tubers should be potted from May until August; and as the growth is not so rapid during the declining days of the year, those started in August will maintain a supply until late in the spring. When plants have to grow through the winter it is necessary that they should have a light position close to the glass, and care must be taken not to cause a check to their growth.

The pots used should be clean and well drained, a layer of moss being placed over the drainage, then nearly filled with the compost, placing a little sand in the centre, in which to embed the tubers, care being taken to have their growing ends near the centre, and covered with the compost. This should consist of a good fibrous loam, a liberal admixture of leaf soil, a seventh of manure, and sufficient coarse sand to keep the whole porous. Peat may be used as a substitute for the leaf soil if more convenient, but the soil must be light and rich. A number can be placed together in the same pot if large specimens are required, but for all ordinary decorative purposes 6-inch pots are large enough. Tydeas, if properly attended to when resting, make strong growth from very small tubers. When placed in the small pots and the roots reach the sides they should be transferred to the larger size, only removing the drainage, and injuring the roots as little as possible in carrying out the operation. While in active growth the plants require liberal applications of water at the roots, except immediately after they are repotted, when water should be applied with care and judgment until the roots have permeated the new soil. When the pots are full of roots liquid manure may be supplied with advantage. Syringing the foliage is not needed, and indeed the leaves when wet are often injured by exposure to the sun.

The resting period is by no means the least important, and success to a large extent depends upon the treatment then followed. Tuberous-rooted plants of this nature are often neglected by allowing them to remain in cold potting sheds, or by storing them away under the stages. Neglect in this respect brings Tydeas into an unsatisfactory state, and instead of increasing in numbers and gaining strength year by year they become weaker, and in a few seasons are almost useless. If, however, after flowering they are liberally supplied with liquid manure, it will assist considerably in increasing the size of the tubers, which must be plump and matured before resting. The plants must have attention until the foliage commences dying, when they can be kept somewhat drier, and allowed a similar temperature to that in which they were growing. When finally at rest they can be stored in any cool place where a temperature ranging between 35° and 40° can be maintained. Tydeas will not endure being kept quite so dry while resting as Achimenes, —G. W.



RECENT WEATHER IN LONDON.—A distinct change of weather came over the metropolis at the end of last week, for though both Saturday and Sunday were warm they were appreciably cooler than the foregoing day. Monday, though bright at intervals, was colder, while the north-easterly wind of Tuesday was quite searching. Wednesday was dull and cold.

WEATHER IN THE NORTH.—The change to drier and warmer weather which took place a fortnight ago has continued, and the heat has on some days been excessive. Already there is a general wish for rain, as the high winds which have been frequent have caused great drought. On Monday evening there was little appearance of change.—B. D., *S. Perthshire*.

THE ROYAL HORTICULTURAL SOCIETY'S AUTUMN FRUIT SHOW.—By far the most extensive, and in every respect the finest, hardy fruit shows annually held in this country are those arranged under the auspices of the Royal Horticultural Society in the Crystal Palace in the early autumn. The schedule for this year's show, which opens on September 28th and closes on the 30th, is now being distributed. We do not observe that attention is drawn to any new features, nor would it appear easy to devise many of a substantial character. Very good prizes are offered for Grapes, Peaches, Nectarines, Figs, and Plums, but Apples and Pears are naturally honoured with the lion's share. There are prizes for amateurs, nurserymen, gardeners, marketers, cottagers, and, indeed, everybody who may be desirous of competing. The several county prizes afford many opportunities, besides special encouragement, as the first and second prize winners in the sections, have their fares paid from their nearest home station to the Crystal Palace—an arrangement that stands alone amongst inducements, and which cannot be made too widely known in the provinces. Altogether there are 174 classes, and a grand exhibition may be confidently anticipated.

WAKEFIELD PANTON SOCIETY.—Programme of meetings for the second quarter—session 1899. Meetings are held at the 'Strafford Arms Hotel' each Saturday evening at eight o'clock prompt. June 17th, Discussion upon subjects interesting to amateur gardeners, introduced by Mr. G. Bott; 24th, Wild Flower Exhibition, essay by Mr. A. E. Benney, Bradford. July 1st, "The Cucumber," Mr. W. H. Vere; 8th, "Gleaning from the Gardens of Literature," Mr. Rd. Ainley, Morley; 15th, the Rose Exhibition, essay by Mr. G. Hudson, Woolley; 22nd, visit to Rishworth Moors and waterworks; 29th, the Pelargonium Exhibition, essay by Mr. J. G. Brown. August 5th, "The Fuchsia," Mr. G. Dunsmore; 12th, "The Carnation and Picotee," Mr. Geo. Gill; 19th, visit to Hebden Bridge for Hardecastle Craggs; 26th, "The Melon," Mr. J. Thomas. The meetings will be opened by the reading of the minutes at 8 o'clock, and the lectures will commence at 8.15.—T. H. MOUNTAIN, A. S. NICHOLSON, *Hon. Secs.*

TWO SHOWY CALIFORNIAN PLANTS.—Although not cultivated to any great extent, the two plants, *Fremontia californica* and *Carpenteria californica*, are known by repute to most horticulturists as showy flowering shrubs. Like many other good things from the same country, they are not sufficiently hardy to withstand without injury, in the open, any but the very mildest of winters as far north as London, and even with the protection of a wall they are generally killed by a spell of severe frost. In the S.W. counties, however, and in some parts of Ireland they do well, especially if a snug corner can be given them. At Kew a good-sized plant of each has been included among the occupants of the new Himalayan house, and in that place both are now in flower. *Fremontia californica* is represented by a specimen 6 feet high. It is of pyramidal habit, the branches being thrown out at right angles with the stem. The flowers are borne singly from last year's wood; they are deep, rich yellow, and $3\frac{1}{2}$ inches across. The leaves are more or less cordate, rather deeply lobed, and very hairy on the under surface. The example of *Carpenteria* is about $4\frac{1}{2}$ feet high by $3\frac{1}{2}$ feet through, and is thickly covered with upright racemes of pure white flowers. Of the two plants this is certainly the more useful, and is worth growing either as a pot or border plant for a cold greenhouse. If grown in a pot, it will be greatly benefited by being plunged outside for the summer.—W. D.

A RECORD IN "COLD": 421° OF FROST.—It has been stated that in the production of liquid hydrogen, as exhibited by Professor Dewar at the Royal Institution on the 7th inst., an intensity of cold is required which comes within 21° centigrade of the absolute zero, or equal in the common Fahrenheit scale to 421° of frost. At the absolute zero all heat would be exhausted, the rarest bodies would be solid, and all molecular motion would cease. The Professor plunged liquid air and oxygen into the fluid hydrogen, and they became almost instantly a solid like ice.

TREE CARNATION DUCHESS CONSUELO.—Raised by Mr. Whillans at Blenheim, and exhibited at Oxford in June, 1896, under the name of "Admiration," for which it was granted a certificate, this variety passed into the hands of Messrs. Dicksons, Ltd., Chester, who have tested its good qualities. The fine group exhibited by them at the Whitsuntide show at Manchester, called for the highest admiration from visitors. It was named "Duchess Consuelo" in honour of Her Grace the Duchess of Marlborough, and ought to soon be more frequently met with than at present. The flowers are as large as a Malmaison, of a beautiful soft canary colour, and are borne on long stout stems, the branching habit showing each flower perfectly, and adding great weight for grouping purposes. The plant also possesses vigorous growth and free blooming qualities.—R. P. R.

SIDCUP AND DISTRICT HORTICULTURAL SOCIETY.—For a comparatively young society the schedule that has been sent us from Sidcup is an excellent one, from which it may clearly be seen that the object of the promoters is to widen the interest in gardening in the district. Though individually the prizes are not large, collectively they amount to a goodly sum, and should be sufficient to insure a diversified display and excellent competition throughout. There are open classes, gardeners' classes, as well as a cottagers' section, with, at the summer show, seven classes for bees and honey. The respective dates of the two exhibitions are Thursday, July 20th, at The Meadow, Sidcup Place, and Wednesday and Thursday, November 8th and 9th. The Hon. Secretary is Mr. Tyson Crawford, F.R.H.S., Sidcup, who will have pleasure in forwarding schedules to applicants as well as other necessary information.

EVESHAM FRUIT GROWERS.—Our attention is called to a movement having for its object the revival of the Insect Pests Committee. It seems that this organisation lapsed after the great pest of the district, the winter moth, was conquered by the use of Paris green. If the Committee had done nothing more than that its existence would have been abundantly justified. The able growers in the district will be fortunate, however, if they have no more insect foes to conquer or friends to preserve, and it is probable that a consciousness of the need of further investigations in those directions has impelled Mr. Hedges, the indefatigable Mr. Hiam, and other friends, to take steps for the revival of the Committee in question. Miss Ormerod, the consulting entomologist, thinks there is still good work to be done, and certainly great credit will be due to all who effectively co-operate in eliciting and disseminating information that may be of advantage to the fruit growers in and beyond the borders of the fertile vale.

ISLE OF WIGHT.—The Cowes Horticultural Society held, in connection with its last monthly meeting, a members' exhibition of fruit, flowers, vegetables, and plants. The exhibits were numerous, and of first-class quality. Mr. J. Heygate, gardener to Mr. Mumford, The Briary, had a very artistic table decoration; Mr. A. Saunders, gardener to Dowager Countess of Harrington, Stanhope Lodge, staged a collection of plants and a large bouquet; Mr. R. Saunders, florist, staged flowering and foliage plants, also a large quantity of cut flowers in variety; Mr. A. Hills, E. Cowes, arranged a group, with great taste and effect, of greenhouse and stove flowering and foliage plants, intermixed with Palms and Ferns. Mr. W. Guy, gardener to Mr. Godfrey Baring, J.P., D.L., C.C. (Chairman of the I.W. County Council), contributed a bouquet and large sprays of *Viburnum plicatum*. The amateurs and cottagers were strongly in evidence with Peas, Tomatoes, Lettuces, Cabbages, Onions, Asparagus, Cucumbers, Sweet Peas, and Carnations. The principal exhibitors were Capt. Brailley and Messrs. Munt, Rashley, Greenham, K. T. Benzie, S. Benzie, H. Hendy, W. Trivett, C. E. Creighton, and J. Love. The meeting was presided over by Mr. Geo. Fellowes, who, after a few remarks, introduced the County Horticultural Instructor (Mr. S. Heaton), who gave an address on "Exhibitions: Their Objects and Management," which proved interesting and instructive. A unanimous vote of thanks was accorded the Lecturer and Chairman, after which several new members were elected. The exhibition was then thrown open to the public, and was largely attended by the inhabitants of the yacht: g capital interested in gardening.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
June.										
Sunday .. 4	E.S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday .. 5	W.S.W.	71.4	60.9	80.5	50.0	—	62.5	58.2	53.1	41.1
Tuesday .. 6	W.S.W.	71.8	59.8	82.7	49.9	—	63.6	58.9	53.5	41.9
Wednesday 7	S.E.	69.9	63.5	79.3	51.2	—	64.9	59.7	53.9	43.0
Thursday 8	E.S.E.	70.0	60.8	75.9	50.0	—	63.4	59.3	54.3	41.6
Friday .. 9	E.N.E.	56.2	49.8	62.8	49.5	—	62.5	59.9	54.6	47.0
Saturday 10	N.N.E.	55.1	48.6	58.9	48.5	—	61.8	59.7	54.9	47.1
		56.7	50.5	67.8	50.9	—	62.1	59.7	55.2	43.4
MEANS ..		64.4	56.3	72.6	50.0	Total	63.0	59.4	54.2	43.6

The weather during the week has been remarkable for cold drying winds, mostly from the east. No rain has fallen since May 24th.

— THE WEATHER.—Another very sudden fall of temperature occurred on Tuesday. In London the morning reading of 55° was only 3° lower than on Monday. Later in the day, however, very little rise took place, the maximum reading, 62°, being 7° below the average, and as many as 14° lower than the highest point reached on Monday. Tuesday was the nineteenth day with an almost entire absence of rain in all but the extreme northern and north-western districts. In London it was the twentieth, the drought in the metropolis being now as severe as any recorded since the spring of 1893.—("Daily News.")

— MAY WEATHER AT DOWLAIS.—Rainfall 4.30 inches, which fell on fifteen days. We had rain each day from the 15th to the 25th inclusive, when 3.75 inches fell. Greatest fall 1.49 inch on the 19th. Mean maximum temperature, 61.935°; highest reading, 78° on the 29th. Mean minimum, 38.161°; lowest reading, 26° on the 4th. The readings from the 3rd to the 6th inclusive were 28°, 26°, 27°, and 30° on the 26th and 27th. The wind was in the S.W. on ten days, and in the N. and N.E. on eleven days. There were ten sunless days. Very cold wind throughout the month; everything very late.—WM. MABBOTT.

— MAY WEATHER AT BELVOIR CASTLE, GRANTHAM.—The wind was in a northerly direction twenty days. The total rainfall was 3.50 inches, which fell on fourteen days, and is 1.14 inch above the average for the month. The greatest fall was 0.69 inch on the 23rd. Barometer: highest reading, 30.478 inches at 9 P.M. on the 6th and 28th; lowest reading, 29.144 inches at 9 A.M. on the 15th. Thermometers: highest in the shade, 71° on the 31st, lowest 27° on the 4th and 5th. Mean of daily maxima, 56.38°, mean of daily minima 39.54°. Mean temperature of the month, 47.96°; lowest on the grass, 22° on the 4th and 5th, highest in the sun 124° on the 18th. Mean temperature of the earth at 3 feet, 48.96°. Total sunshine, 187 hours 55 minutes. There were four sunless days.—W. H. DIVERS.

— CYTISUS SCOPARIUS ANDREANUS.—Now that nurserymen are supplying us with plants of this fine Broom on its own roots instead of grafted ones on the common variety, we can see more what the plant is really capable of, and that is making a grand show now. Grafted plants stood still for nearly two years, but those on their own roots planted twelve months later have caught them up and will soon leave them far in the rear. When established it is even more free-flowering than the common Broom, if this is possible, and it makes a really grand display. Although not particular as to soil, there is no doubt all these Brooms like a mixed tilth much better than a very heavy or a very light one.—C.

— AN ADDITION TO EPPING FOREST.—Just a fortnight ago the Duke and Duchess of Connaught dedicated, for public use, an additional 28 acres of woodland to Epping Forest, at the part overlooking Enfield and the valley of the Lea. Mr. E. N. Buxton is the donor of the land, a gentleman who, with his brother, recently presented the Corporation of London with the forest land known as Highams Park. Yardley Hill is the name of the newly added gift. In the presentation address to their Royal Highnesses it was brought out that £330,000 had been spent by the Corporation already in connection with the forest, and an annual outlay of £4000 was required for its maintenance. The opening ceremony was witnessed by many people.

— DEATH OF MR. THOS. J. SALTMARSH.—We learn with deep regret of the death of Mr. T. J. Saltmarsh of Chelmsford, which occurred on the 2nd inst. The deceased was well known and highly respected for his upright dealing in all matters of business, and his loss will be severely felt by his personal friends.

— ENGLISH *versus* FOREIGN APPLES.—Although a staunch supporter of English fruit, I must acknowledge that there is something about the quality of such Apples as Tasmanian Newtown Pippins which so pleases the British public that they will buy them freely in March, and will not even look at the examples of English growth at that time. It is all very well for some persons to tell us how to supplant the foreigner in Apple culture, but I fancy if they had to practise the sale of home-grown Apples they would relate a different tale. I know from experience that even Cox's Orange Pippin in good condition is difficult to sell when "foreigners" come into the market, especially at a long price. For this reason I do not advocate the planting of late varieties. Plant early and midseason sorts, and sell them direct from the trees before there is time for the fruit to depreciate by storage.—E. MOLYNEUX.

— CLERODENDRON FALLAX.—Although among the brightest and best of stove plants, this Clerodendron is not given the attention it deserves. There are many places, it is true, where its culture is taken up with spirit, and a speciality made of good stocks of plants to follow each other nearly the whole year round. But they are in the minority unfortunately, and there are many hundreds of large gardens where the plant is absolutely unknown. To grow *C. fallax* well a strong moist heat is necessary from the time the cuttings or seeds are inserted until the flower racemes begin to show colour, when rather less moisture is necessary in the atmosphere, and the plants may be removed to a cooler structure to conserve the flowers. Many plants are injured by being kept too cool in the winter, and plants in flower ought not to be taken to dry and draughty conservatories or rooms, or they are injured, and will show it by the young shoots drying off instead of extending. Very loose potting is not advisable, but the leaves are larger and handsomer when they grow rapidly, so no great amount of ramming need be practised. Good fibrous loam and a little peat or leaf mould, with a sprinkling of coarse sand and a rather liberal addition of either dried cow manure or a good concentrated fertiliser, will make a suitable compost for the plants. Be very careful to keep insects in check, as these will soon ruin the finest plants.—C. H.

— A SIMPLE WAY TO TELL IF SOIL NEEDS LIME.—The following methods have been taken from Bulletin No. 59 of the New Hampshire College Experiment Station by our transatlantic contemporary "Gardening," and are so simple and inexpensive that they can readily be used by every gardener in testing his compost heap and potting soil:—"A tablespoonful or more of soil is placed in a tumbler or eup, and moistened with sufficient water to make the mass of about the consistency of a thick paste. It is best to allow it to stand for from fifteen to twenty minutes before making the test, though it may be made at once. With a knife blade part the soil, and introduce one end of a slip of blue litmus paper (a few pence will buy enough to make many tests), which may conveniently be one-half to three-quarters of an inch wide and 2 inches long, press the soil about the paper, and after from two to five minutes remove the paper without tearing it, rinse off the adhering soil with water, and note whether it still retains a blue tint or has become positively red. If the paper has been strongly reddened, it may be concluded that lime will probably benefit many crops which may be grown upon the soil. If the soil has a marked reddish tint, as is sometimes the case, it may be better to bring but one side of the paper in contact with it; and if a red colour comes through to the other side it may be concluded that the soil is acid. In all cases care must be taken not to handle the end of the paper which is used for making the test, since the touch of the fingers may redden it, and thus one might be deceived. By another method a teaspoonful of soil is stirred into a glass of water to which a few drops of ammonia have been added, and the whole set aside for some hours; the liquid which remains at the top will be nearly colourless, but where lime and magnesia are lacking in a soil the liquid has usually a dark brown or black appearance, the intensity of colour depending upon the amount of soil taken, and of course upon its need of lime." Wood ashes contain a large amount of lime in a very available shape, as well as other valuable fertiliser ingredients. When they are not at hand air-slaked lime can be used. It must be remembered that lime mixed with manure, bone, or any substance containing ammonia will set the ammonia free to pass off in the air and be wasted. In using lime or wood ashes they should be mixed with the soil before the other fertilisers are added, and the soil allowed to stand for some time.

— **PRESENTATION TO MR. ALEXANDER DEAN.**—Our correspondent "A. D." was on Saturday last, on the top of St. Ann's Hill, near Chertsey, presented by the Committee of the Kingston Total Abstinence Saturday Popular Entertainments with a handsome silver-plated inkstand, as some recognition of his services to them in organising these entertainments with such marked success during several years. The inkstand bears a suitable inscription. Mr. Dean's first presentation of this nature was in the form of a silver watch, given to him by the Committee and friends of the Shirley Horticultural Society (Southampton) in 1870, which he did much to organise in 1865, and it has remained a very active, energetic society to this day. Two other presentations have been made to him since, besides the one given on Saturday last, so that he must be regarded as a fortunate man, whose labours do not go unrecognised. Our versatile correspondent does not in the least mind who knows to whom the familiar initials belong. He has done effective work in the cause of temperance.

— **ANOTHER BULLFINCH CHARGE.**—I think most people are loth to put forth evidence against this beautiful member of the feathered tribe, but the truth must be told, and he is a mischievous fellow when once he commences his depredations. The person whom he loves to worry most is the fruit grower, and the way in which he will persistently strip the buds from fruit bushes is now an old story. But his habits of mischief do not begin and end among the fruit, and quite recently I was in a garden where I noticed how scanty were the flowers on both the white and purple Lilac trees. I passed some remark on this, and was surprised to learn that the direct cause was the bullfinches. The trees early in the spring, so the gardener told me, were well stocked with buds, and the promise of bloom was abundant, when he noticed the bullfinches began to be very busy among the Lilacs. Apparently they found something to their liking, and did not relax their efforts until they had deprived the trees of the majority of the buds.—G.

— **MR. WM. PAUL, V.M.H., AND THE CHESHUNT MAGISTRATES.**—The experiences of Mr. William Paul, the well-known nurseryman, at the Cheshunt Bench this week, are calculated to induce him never again to perpetrate the offence of summoning before the magistrates persons who commit depredations on his property. He possessed in his nursery at Wormley a fine Araucaria. On Easter Sunday the tree attracted the attention of four youthful excursionists from London, who seem to have said, "Here's a tree, let's spoil it;" and spoil it they did by cutting branches off. They were caught, summoned before the Bench, and ordered each to pay 1s. 3d. damages and 2s. towards costs. As the prosecutor had to pay 16s. for the summonses and 2s. for the subpoena, total 18s., and as the excursionists were only made to contribute 8s. towards costs, Mr. Paul loses 10s. In other words, the prosecutor, who was the injured party, is mulcted in more than three times the penalty which was inflicted on each defendant by way of damages and punishment.—("Herts and Essex Observer.")

— **NATIONAL DAHLIA SOCIETY.**—The Committee of the above Society has made arrangements to hold a meeting at the Royal Aquarium, Westminster, on Tuesday, September 19th, for the purpose of affording an additional opportunity for the exhibition of seedling Dahlias, and for the awarding of the Society's first-class certificate to such of the new varieties exhibited as the Committee may consider worthy. In order to give additional interest to this meeting, it is thought desirable to offer prizes in a few competitive classes, and several amounts have been already promised. It is earnestly hoped that members of the Society will contribute to the special prize fund, so that an exhibition worthy of the Society may be provided. The Directors of the Royal Aquarium have undertaken to provide ample accommodation in the galleries of the building, to furnish all the necessary staging, to issue posters, and advertise the Exhibition in the daily and weekly papers, to give passes to exhibitors, and supply tickets of admission to the building to members of the National Dahlia Society and their friends at half-price. But they stipulate for a two-days exhibition, to which the sub-committee appointed to make the necessary arrangements has consented. Miscellaneous trade exhibits are invited, for which a moderate charge for space will be made as a contribution towards the expenses of the Show. Subscribers of 2 guineas to the prize funds can exhibit miscellaneous contributions free of charge. Subscribers to the special prize fund will not be charged an entrance fee in order to compete, non-subscribers to the fund must pay an entrance fee of 2s. 6d. The amount offered in the suggested schedule is £22 10s., but this is contingent upon the amount being subscribed. Dahlia lovers must, therefore, come to the assistance of the Society and send subscriptions to the Hon. Sec., Mr. J. F. Hudson, The Gardens, Gunnersbury House, Acton.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting to be held in the rooms of the Society, 70, Victoria Street, Westminster, S.W., on Wednesday, the 21st inst., at 4.30 P.M., the following papers will be read:—"Heavy Falls of Rain recorded at the Observatories connected with the Meteorological Office, 1871-1898," by Robert H. Scott, D.Sc., F.R.S.; "Average Height of the Barometer in London," by R. C. Mossman, F.R.S.E., F.R.Met.Soc.; "A new Self-recording Anemoscope," by Joseph Baxendell, F.R.Met.Soc.

— **PELARGONIUM RADULA.**—This is one of the best of the scented-leaved section, as it does not grow quite so strongly as many, yet has a more filled-up look than the very fine cut kinds, such as Pheasant's Foot and similar ones. It has the merit of standing much longer, too, in the house than most, and a plant that has been standing on my table all through the winter is now quite fresh and green, and growing at all its points. It is getting late for propagating, but there is yet time to obtain plants for use in late winter and spring. Their culture is easy where good light house or frame room can be spared, and they are very useful when indoor furnishing has to be done.—H. BURY.

— **THE STRAWBERRY SEASON.**—Strawberries are already coming into the market, and if some showers fall, sufficient to moisten the ground without gritting the fruit, it is likely that we shall have an adequate supply. Strawberries love moisture, and the rain that fell towards the latter part of May did much good to the plants. Growers have, however, great difficulty in getting Strawberry pickers, and the same may be said of Gooseberries. The fact is, says the "Rural World," these hands are getting fewer every year—so much so that many fruit grounds have been seeded down to grass that might have been still used for market gardening if labour had been procurable.

— **LATE BROCCOLI.**—From whence come the remarkably fine heads of Broccoli now in the market? There is one before me, bought from the neighbouring greengrocer, of fine massive proportions, fully 9 inches over the white head, and weighing from 3 to 4 lbs. Surely such superior heads could come only from a northern district on June 10th. I know we have late varieties in Model, Late Queen, Methven's June, and others, but these have all been over, in the south at least, since the end of May, and what were seen then were very small. I hear of a very fine late selection from Bucks in a private garden, but such a sample as the one before me has come from some market-grown breadth no doubt. But where? Will some northern correspondents tell us whether they have white Broccoli well into June in Yorkshire or in Scotland?—A.

— **GIGANTIC ASPARAGUS.**—Several bundles of very fine Asparagus were recently disposed of in the Birmingham Fruit and Vegetable Market by Mr. Thos. Howell, garden produce salesman. It was grown at Evesham for prizes. The heaviest bundle of 100 heads weighed 25½ lbs., and was about 20 inches in length. Other bundles weighed 24 lbs., 23 lbs., 19 lbs., and 14 lbs. respectively. A heavier than either of the above was forwarded to London from Evesham. It was stated that one or two of the foregoing examples were bought for presents at a sovereign each, and others at 30s. a couple. It would be interesting to know if there have been recorded weights exceeding those in question elsewhere.—W. G. [We have seen no such elephantine Asparagus as the extraordinary weights imply, and so far as we know they are unequalled. The stems must have been earthed up to an unusual height to have obtained a length of 20 inches, and the scales remained closed, as they presumably were, to be of exhibition quality. Evesham is evidently in the ascendant in Asparagus culture.]

PATCHY POTATO PLOTS.

I CANNOT easily recall another season when there were so many complaints of the uneven and patchy aspect presented by Potato quarters, either in garden or field, as this year. There are, it is true, exceptions, where no signs of failure occur, but among the cottage, allotments, and larger gardens I have seen many cases. Some "sets" have never come up at all, but are tubering without foliage. This blindness is somewhat difficult to understand in my case, because the seed was in good condition for planting.

A selection of the old Ashleaf is the worst offender among the earliest section, but Beauty of Hebron and Snowdrop are equally as irregular among the maincrop plantings. I can only attribute the failing to the excess of rain which followed the planting, causing the ground to be cold, particularly as the night temperature ranged so low. I had always looked upon the old Ashleaf as a hardy Potato, but it has this season, for some reason, acted falsely, and allowed Sharpe's Victor and Ringleader outstrip it in that respect. These, as well as Harbinger, First Crop, and Veitch's Ashleaf come up well, and did not suffer so much from spring frosts as usual.

I should like to ask "A. D." whether in his extensive plantings he has found many such failures as noted above.—W. S.

COMBATING RED SPIDER IN VINERIES.

RED spider is without doubt one of the most troublesome insect pests which Grape growers have to contend against, and if no such insect existed well-coloured Grapes would be more common than they are at the present time. How often may we meet with a house in which the Vines look extremely promising up to a certain stage, then red spider puts in an appearance, and through failure to check it in time, the berries neither swell to their full size nor colour perfectly. Those who have under their charge Vines which are trained 2 or 3 feet from the glass ought not to have much difficulty in combating this enemy, provided the Vines are in a satisfactory condition at the roots, and that their general treatment is sound. Water must, of course, be given in abundance when needed, also high feeding practised, and I opine that when these conditions are found in combination red spider is not much dreaded.

Unfortunately there are many cultivators not so favourably circumstanced. They have to do the best they can with Vines trained so close to the glass that the leaves touch it; in each instance attacks of red spider are inevitable, and the order of the day should be to watch for the first signs of the enemy and take effective measures to stamp it out. These signs may often be noticed while the Grapes are being thinned, and the common practice of keeping the atmosphere of the house very dry during the flowering period favours the spread of red spider. I am convinced that in time all Grape growers will be fully alive to the fact that the ancient practice of maintaining a dry atmosphere at thinning time is one of the greatest mistakes which can be made; all that is needed is to have the atmosphere fairly dry and buoyant at noon; heavy morning and afternoon dampings of the house are of the greatest advantage.

As the work of thinning proceeds a sharp look out should be kept for insect-infested leaves; when such are found sponge them thoroughly with a weak solution of softsoap and water. It is an easy matter to keep a tinful ready mixed in the house, and a little time spent in combating the enemy then will prevent much anxiety, and perhaps hours of labour at a later stage.

At one time I had an aversion to syringing Vines, but have since found the beneficial effects of the practice when well carried out; and, if after having first sponged the infested leaves, I find the pest still spreads, I do not hesitate to syringe thoroughly at closing time during bright afternoons. By this simple practice alone I have frequently completely mastered red spider, and brought the leaves into a thoroughly healthy condition again. If clean soft water is used, and care taken to force it between the bunches, the berries are not marked or spotted in the least. Water falling from the leaves on to the berries never seems to mark them; it is only when it is forced directly on to the bunches from the syringe that the bloom gets rubbed off. A deft manipulator of the syringe can easily avoid the latter error.

I never like to resort to painting the hot-water pipes with sulphur, and then heating the water to boiling point, as it entirely takes away the freshness of the leaves, leaving the edges of them rusty, and impairs the colouring of the Grapes. I am well aware that the plan is regularly practised in many large Grape-growing establishments, and good as the produce sent out from such places is, I am inclined to think the "finish" would often be better were this method of killing red spider not followed. There is really no necessity to take such drastic measures now, even in the case of a bad attack, for fumigating with XL All vaporiser will kill the enemy quite as well. A strong dose must, however, be given, and in houses containing Muscats it is not safe, as the tender foliage of that variety is easily injured. A fuming sufficiently strong to be effectual seems to distress though not mark the foliage of other varieties, and except in the case of a bad attack, in which all other remedies failed, I like if possible to manage without fumigating, but, nevertheless, XL All, I am bound to admit, is the best remedy I have yet tried for a desperate case.

Other aids towards accomplishing the objects in view are the following: Pay especial attention to early ventilation, so as to prevent the temperature of the house from rising rapidly, a condition extremely trying for leaves near the glass. By admitting the cool early morning air the leaves seem to be invigorated for withstanding the heat of the hottest day, and the temperature of the house is easily kept down to a desirable point. Also encourage lateral growth, which will, by increased root action, aid in the case of black Grapes approaching the colouring stage, training in between and under the main leaves every lateral that is formed. Although, contrary to advice usually given, I have proved to my own satisfaction that such additional growth, although it may not be fully exposed to light, is beneficial to the general health of the Vines at that stage, and Black Hamburgh Grapes invariably colour better under a heavy than a thin canopy of foliage.

Water at the roots must, of course, also play an important part in combating red spider; when the border is approaching dryness, give copiously rich brown drainings from stables or cowsheds, and do not neglect to mulch the border with short cow or stable manure.

—H. DUNKIN.

"WOOD AND GARDEN."*

THOSE who look upon gardening as something more than a means of earning a livelihood will thank Miss Jekyll for giving us in this charming book the results of her thought, observation, and practice for nearly thirty years. It cannot be said that the plan of the book is entirely new; for others, known to readers of garden literature, have preceded Miss Jekyll in a somewhat similar method. Yet her book is no imitation, but is full of freshness and originality. Even had the work not had on its title-page the name of one known by reputation to all British garden lovers, the introduction with which it opens would be a sufficient passport, and would by its manner and matter induce a perusal of what follow. This is a series of twelve chapters upon the months, with their trees and flowers, and several others treating of such subjects as "Large and Small Gardens," "The Flower Border and Pergola," "The Primrose Garden," &c.

The master-spirit of the book may be learned from the introduction. It shows itself in various ways, but through all these runs the desire expressed in the following words: "The lesson I have thoroughly learnt, and wish to pass on to others, is to know the enduring happiness that the love of a garden gives." Whether the authoress emulates Jefferies in her word-pictures, speaks of her garden methods, discusses colours and their arrangement, or the vexed questions involved in the relations of master and man, this wish is plainly evident. Critical, too, as Miss Jekyll can be—the views she holds regarding flower shows tell as much—her notes of criticism are softened by that toleration which shows itself in the words with which a passage referring to the various styles of gardening is closed: "And all are right and reasonable and enjoyable to their owners; and in some way or degree helpful to others." Not everyone will admit as much.

"Wood and Garden" is not a book which can be taken up, read through hurriedly, and then put away. There are passages which show us that had Miss Jekyll cared to confine herself to the purely picturesque or "word-painting" aspect of her subject, she would have given us a book which would have been as highly appreciated by many as the present one will be. It might, and probably would, have been less useful, and could not have fulfilled the aim expressed in the words quoted from the introduction. It would, however, have given delight to the many who, relishing what is provided, eagerly wish for more.

To illustrate this, had it not been for the length of the quotation required to do it justice, we might have quoted a passage from the chapter on "January." It describes the woodland with its "warm carpet of pale, rusty Fern," its "colour harmonies of grey bark and silver-grey lichen, only varied by the warm, feathery masses of Birch spray." And how well we are told of the "sombrely cheerful" Holly, and the "silver-barked Birches." Many equally beautiful descriptions occur. We must ever think gratefully of the Nut-walk at Munstead for being the means of giving us in the same chapter a delightful account of a visit paid by the authoress to the Cobnut nursery at Calcot, near Reading. It is remarkably well written, and it will not do to spoil the picturesque scene by a partial quotation. No one is likely to forget readily Miss Jekyll's picture of the quaint nursery, with its tender-leaved Nut trees in their earliest greenery; the great chained mastiffs; the "brawny wholesome forewoman," and Mr. Webb, its trim old master.

It may be noted, too, as worthy of special remembrance, the mention of the blooming of *Lilium giganteum*, and the description of the plant and its flowers. Only an enthusiast who knew this giant Lily well could have written of it thus:—"In the evening the scent seems to pour out of the great white trumpets, and is almost overpowering, but gains a delicate quality by passing through the air, and at 50 yards away is like a faint waft of incense. In the evening light, when the sun is down, the great heads of white flower have a mysterious and impressive effect when seen at some distance through the wood, and by moonlight have a strangely weird dignity."

A pleasant and, what is more, an extremely useful chapter on "June" is largely devoted to Roses. Perhaps it is only those of us who dwell in the country who can enter into the spirit with which the authoress begins the chapter. "What is one to say about June—the time of perfect young summer, the fulfilment of the promise of the earlier months, and with as yet no sign to remind one that its fresh young beauty will ever fade? For my own part, I wander up into the wood and say, 'June is here! June is here! Thank God for lovely June.'" Happy in having such a neighbour is Mrs. Edgeler, whom Miss Jekyll has photographed as she picked her bunch of Roses from her old standard bush (see illustration, fig. 109).

* "Wood and Garden." London, Longmans, Green & Co., Paternoster Row.

Column after column might be culled from the tale of the months, but only one or two more extracts can be taken. Of Dahlias as garden flowers Miss Jekyll, in speaking of the defects of many flowers, pretty in themselves, but of bad habit, says:—"For however charming in humanity is the virtue modesty, and however becoming is the unobtrusive bearing that gives evidence of its possession, it is quite misplaced in a Dahlia. Here it becomes a vice, for the Dahlia's first duty in life is to flaunt and to swagger, and to carry gorgeous blooms well above its leaves, and on no account to hang its head."

From "October" the following is taken as an example:—"Passing along the wide path in front of the big flower border, and through the pergola that forms its continuation, with eye and brain full of rich, warm colouring of flower and leaf, it is a delightful surprise to pass through the pergola's last right-hand opening, and to come suddenly upon the Michaelmas Daisy garden in full beauty. Its clean, fresh, pure colouring of pale and dark blue, strong purple, and pure white, among masses of pale green foliage, forms a contrast almost startling after the warm colouring of nearly everything else; and the sight of a region where the flowers are fresh and newly opened, and in glad

but the more we know the more we see the truth of what Miss Jekyll says, "The more ignorant the questioner, the more difficult it is to answer helpfully." Most amusing is it to read of the ladies who had got a simple border plant and "had made a nice hole with their new trowel," and had bought and emptied into the hole a "whole tin of Concentrated Fertiliser!" Yet the plant died! The chapter on the "Flower Border and Pergola" must be read as a whole. It is hopeless to attempt to convey in a few words its suggestiveness and value.

Miss Jekyll's Primroses are well known, but one of the shortest of the divisions of the book is devoted to her Primrose garden. Long before we come to this we have learned that the authoress is, what she terms herself, a "working" amateur; if we had not, we would have seen it from her account of the two days' work dividing the Munstead Primroses. It is practical, yet idyllic, and, like many other idylls, has behind it something prosaic. In this case it is—the midges.

Those who write about flowers will learn much from the "Colours of Flowers," although we may be pardoned for saying that it is



FIG. 102.—FREE CLUSTER-ROSE AS STANDARD IN A COTTAGE GARDEN.

spring-like profusion when all else is on the verge of death and decay gives an impression of satisfying refreshment that is hardly to be equalled throughout the year." While we could extract many passages of similar tone, it is not to be taken for granted that they form the whole of the teaching of the chapters on the months. They abound with "practical and critical" notes of culture, arrangement, and colours of many plants, spoken of in the most helpful way.

The chapter on "Large and Small Gardens" is one which gives many useful hints, not only to those who are about to form or improve a garden, but to others as well. Here is a little bit with which it begins: "The size of a garden has very little to do with its merit. It is merely an accident relating to the circumstances of its owner. It is the size of his heart and brain and goodwill that will make his garden either delightful or dull, as the case may be." Pleasant pictures of gardens are given in appreciative words, and a few graphic sentences give the contrast afforded by what is aptly termed "monstrous gardens." The beauty of an "orchard garden" is spoken of, and a touching page or so about the window-box of a factory lad reveals, unconsciously to the authoress, that innate kindness of heart which some of us have experienced.

"Beginning and Learning" is enjoyable to those who have passed the initial difficulties of gardening. Our "learning" is never done,

exceedingly difficult to express these as we would like. We have asked people working all their lives among ribbons and other coloured "fabrics" to name the colour of a certain flower and have found them at a loss. Only those living among flowers and trees could have written the delightful passages on the "Scents of the Garden." It reminds us of a walk in Dublin Trinity College Gardens with their talented curator, Mr. F. W. Burbidge, and the revelations had, not only of the perfumes to be discovered as the plants are passed by, but of those which, like the uses of adversity, are only known when the leaf is bruised.

The "Worship of False Gods," "Novelty and Variety," and the "Bedding Fashion," show Miss Jekyll in her most critical vein. Emphatic as are the criticisms, through them can be seen that element of toleration already alluded to. Is it the subject of "Commissions" to which Miss Jekyll refers as a "great evil that calls loudly for redress?" Lovers of "Geraniums" will be grateful to the authoress for the kindly way in which she speaks of the plant, which has been made so common and degraded by its use as a trim bedding plant, that it is overlooked when plants are wanted for plans for which the bright flowers of the scarlet or pink "Geraniums" come in so well.

Perhaps no part of "Wood and Garden" will give rise to so much difference of opinion as that on "Masters and Men." It is difficult to

find the *via media* in the matter. At times the master expects too much from the man. Then the man, who has the greater technical knowledge of the art, but whose acquaintance with plants and gardens may be less—one says it advisedly—than that of his master, may be so rooted to old ways that he cannot carry out the wishes of his employer. He is a wise man who tries to enter as far as he can into his master's plans. By his willing acquiescence he has a better opportunity of bringing to bear upon the plans of work that practical and technical skill he has acquired. But some gardeners appear to think the garden is theirs and not that of their master. Employers, too, sometimes misunderstand their men, and think that what is really a love for their plants is a dislike to interference. We knew a gardener whose employer was actually afraid to cut flowers in the garden while he was in it. But the master would have forgiven it had he seen and heard the pitiful way in which the gardener produced a pot in which he had grown a *Coleus*. The employer had come in and cut the plant off close by the surface of the soil. The old gardener was moved almost to tears as he showed me the remains of his cherished plant. The good employer is, like the good gardener, "born not made."

A notice of "Wood and Garden" cannot conclude without saying that the book is admirably printed on good paper and is well bound. It is fully illustrated with excellent photographs by the authoress. One of these is here reproduced by the courtesy of the publishers. The Dean of Rochester, on page 234 of his charming book referred to last week, says: "Miss Jekvill has given to horticultural literature the most perfect example of practical wisdom in combination with poetical thought"—a happy summary, and the work will be certain to find its way into many garden libraries.

DEATH OF MR. PETER DRUMMOND.

WITHIN a fortnight of his having attended the funeral of his late employer Mr. James Kelway, the founder of the Langport Nurseries, Mr. Drummond, who had been foreman at the nurseries for twenty-six years, very suddenly passed away on Monday evening, June 5th, while engaged in his business. It appears that about 7.30 he sold a customer some plants, and after packing them some little time later, he carried the box to the entrance and put it into a trap. While doing this he appeared well, and was observed to be as chatty as ever, but the moment he had deposited the box in the trap he dropped upon one knee, and instantaneously expired. His elder son, Mr. H. D. Drummond, happened to be on the premises at the time, and was at once summoned, but found his father quite dead, although he had seen him alive and well a few minutes previously.

Mr. Drummond, who attained his sixty-sixth year last August, has been a nursery foreman ever since he reached manhood, excepting only that for a time prior to his coming to Langport he rented a nursery at Yeovil. He was a remarkable man in his business—to use a homely phrase, he was "good all round." It was his especial delight to have an appointment with anyone who took an interest in any of the branches of floriculture, and walk round the extensive span of glass houses at the nurseries, displaying and expatiating upon the specialities he had under his own personal care. How proud he was when he could show an especially fine *Cineraria* or *Begonia*, and he would draw one's attention to the peculiar markings of a *Petunia* and *Gladiolus*, and gloat over the big *Pæonies*, with their varied shades, and the houses hanging thickly with well-shaped *Cucumbers* as long as a man's arm. How tenderly he handled all his nurselings, just as a loving mother would handle her babe; and, meanwhile, he would vary his descriptions of flowers and plants by the interpolation of some shrewd observation on current topics.

If ever a man loved his occupation Mr. Drummond was that man. His whole mind was full of his work, and he seldom, if ever, forgot the simplest detail, even—a fact that showed the vitality within him—up to within a short period of his death, getting up in the night to see that the heating apparatus in the exotic and propagating houses were going on all right: in fact it may truly be said, in every branch of his delightful occupation, he emulated his late employer in enthusiasm. Mr. Drummond leaves a widow, to whom his unexpected death has been a severe shock: two sons, whom he has trained to follow his own business, and three daughters. In him the widow and children have lost a loving husband and parent, the firm a painstaking and trustworthy foreman, and the workmen under his charge a kind and considerate overseer. It may be added that by the latter, however humble their position, he was esteemed as a "good friend," and whenever he found young men with inquiring minds and anxious for information regarding their business, he was never backward in imparting it. It is supposed death was the result of apoplexy, induced by the remarkable heat. There being no doubt but that death arose from natural causes, an inquest was not deemed necessary.—("The Western Gazette.")

To this Messrs. Kelway & Son add: "We need hardly say that, respected and warmly appreciated as he was by us, and associated so closely as he has been since 1873 with the improvement of plants of which he was so fond, and over which he was ever most remarkably enthusiastic, Mr. Drummond's death has been a severely felt loss to us. We mourn a man of forceful intellect and inventive mind, a most clever cultivator, a charming personality, a devoted friend, and most faithful servant."



ROSE SHOW FIXTURES IN 1899.

- JUNE 21st (Wednesday).—Isle of Wight (Shanklin).
 „ 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (R.H.S.) and Southampton.
 „ 28th (Wednesday).—Bath, Croydon, Maidstone, Richmond, and Ryde.
 „ 29th (Thursday).—Canterbury, Eltham, and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Brockham, Ealing, Hanley, Hitchin, Reigate (Redhill), and Tunbridge Wells.
 „ 6th (Thursday).—Co'chester (N.R.S.) and Farningham.
 „ 7th (Friday).—Hereford.
 „ 8th (Saturday).—Manchester.
 „ 11th (Tuesday).—Reading and Wolverhampton.†
 „ 13th (Thursday).—Bedale, Brentwood, Helensburgh, Norwich, and Woodbridge.
 „ 14th (Friday).—Ulverston.
 „ 15th (Saturday).—New Brighton.
 „ 19th (Wednesday).—Cardiff.
 „ 20th (Thursday).—Salterhebble and Sidcup.
 „ 22nd (Saturday).—Newton Mearns.
 „ 25th (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

HEREFORD ROSE SOCIETY

THE exhibition that is annually held in the Shire Hall, Hereford, under the auspices of the Hereford and West of England Rose Society, has been fixed for Friday, July 7th, when it is hoped there will be an excellent display. The schedule that has been forwarded to us by the Hon. Assistant Secretary, Mr. Thomas Carver, High Town, Hereford, comprises twenty-six classes, amongst which are some open to nurserymen, others to amateurs, and still more to Herefordshire growers only. The chief nurserymen's class is for seventy-two varieties, with three prizes of a total value of £12, while for any amateurs there is a class for twenty-four varieties with £4, £2, and £1 as the prizes. In the Herefordshire section a gold medal and £1 are offered for eighteen varieties, with £2 and £1 as the second and third awards. There are also classes for herbaceous flowers and decorative exhibits. All particulars may be had from Mr. Carver, at the address given above.

IVY AS A TIMBER SPOILER.

THERE is no doubt that a venerable old forest tree clothed with Ivy is a fascinating sight, and one of those pictures which some people grow excited over. The old tree has lost its youthful vigour, many of its branches are dead, and the few that remain have a sickly appearance. The Ivy alone looks vigorous, and by its tenacity holds the tree in a perpendicular position. And so it ought to do, considering that it is the parasite which has robbed the tree of its life blood, and by its clinging propensities has brought about its decay. It is really surprising how many hundreds of fine forest trees are now undergoing the process of being done to death by the Ivy which clings to their trunks, and yet no effort is being made to rescue them. There is a spice of sentiment about it, of course, and there is something pretty about a self-planted Ivy fixing itself at the foot of a forest giant, and sending out its tiny tendrils, which grip with infant grasp the stem of the tree.

It may not be noticed at first, or no regard is taken of it, but little by little, year by year, the Ivy ascends higher and higher, till at length it entirely encircles the bole, wreaths itself among the branches, and the tree becomes like a swimmer in the clutches of an octopus.

Why is Ivy allowed to ramble over and entirely ruin so many fine timber trees? Carelessness is one reason, and another is because Ivy is pretty, no matter where it grows, and for the sake of appearances people are loth to cut it away. The idea is obviously wrong. We have none too many forest trees in garden and woodland that we can afford to sacrifice them to the worship of Ivy, and though the latter is charming on wall or ground, I would allow it no quarter on trees. Surely a specimen forest tree is handsome enough in itself without further adornment, particularly if the adorning material is to be the means of bringing about its decay. The moral is obvious, and for the sake of timber trees keep the Ivy in its proper place. Put sentiment entirely aside, take hatchet and saw and boldly cut through the Ivy stems as close to the ground as possible. There will doubtless be an unsightly look about the tree for a time, and the withering of the green will be followed by the rustle of dead brown leaves; but it will be only for a time.—V. T. W.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JUNE 13TH.

THE Show at the Drill Hall on Tuesday was in every respect an excellent one, for not only was the display well diversified, but also of excellent quality. All sections were represented. Mr. Beckett's collection of vegetables attracting equal attention with any other exhibit in the Hall.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. G. Banyard, E. Shaw Blaker, W. Poupart, J. H. Veitch, A. H. Pearson, A. Dean, S. Mortimer, W. Bates, G. Wythes, H. Balderson, J. Smith, and G. Norman.

There was only one collection of vegetables staged for the Sherwood cup, which is to be regretted, though it is doubtful whether a better collection has been staged before in the month of June than the one exhibited by Mr. E. Beckett, gardener to Lord Aldenham, Elstree, Herts, who arranged fifty-three distinct varieties of vegetables in a tasteful and attractive manner. The varieties were—Victoria Rhubarb, Veitch's Perfect Gem Lettuce, in excellent condition; Royal Osborne Cucumber, beautiful fruits; Dell's Crimson Beet, Ellam's Early Cabbage, some excellent Snowdrop Potatoes; Sutton's Magnum Bonum Cauliflower, a group of beautiful heads; Sutton's Dessert Tomatoes, Carter's Trailing White Marrows, typical fruits; Carter's Jumbo Lettuce, large hearts, in prime condition; Express Foreign Radish, Sutton's Sunbeam Tomato, a good even dish; some really fine Scarlet Perfection Carrots, Mushrooms, Magnum Bonum French Beans, Grosse Parresseuse Lettuce, a large Cabbage variety; Veitch's Golden Jubilee Tomato, large, well coloured fruits; Early White Milan Turnips, Long Forcing Carrots, Carter's Model Cabbage, a capital mound; Thomas Laxton Peas, Pen-y-byd Marrows, six pretty fruits in excellent condition; Giant Tripoli Onions, Beckett's Victory Cucumber, Carter's Leviathan Broad Beans, Globe Artichokes in two varieties; Sharpe's Victor Potatoes, a splendid dish; Giant Red Onions, Carter's Duke of York Tomatoes, beautifully ripe; Heartwell Cabbage, Ne Plus Ultra French Beans, Colossal Asparagus, Prince Albert Vegetable Marrows, a green variety; Early Milan Turnip, Brown Cos Lettuce, Mona's Pride Potatoes, Sutton's Peachblow Tomato, looking very distinct here; Carter's Defiance Cauliflower, Ideal Cucumbers, Golden Nugget Tomatoes, Hicks' Hardy White Lettuce, Carter's Early Morn Peas, Carter's Crimson Ball Beet, Spinach The Carter, Canadian Wonder French Beans, Moore's Cream Marrows, Sutton's Early Gem, Cutbush's Polegate Tomato, Veitch's No. 7 Cabbage, Windsor Castle Potato, some monstrous Leeks, Holborn Model, and Carter's Delicatesse Radish.

Mr. Miller, gardener to Lord Foley, Esher, staged nine Melons. The varieties were the old well-known Wm. Tillery and Archie Henderson. Mr. S. Mortimer, Rowledge, also staged a group of Melons Hero of Lockinge.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. H. M. Arderne, S. A. de Graaff, C. T. Drury, H. B. May, R. Dean, W. Howe, J. Jennings, J. Hudson, C. J. Salter, J. D. Pawle, W. Bain, C. Jeffries, J. Walker, G. Gordon, C. E. Shea, J. W. Barr, E. T. Cook, H. J. Cutbush, E. Beckett, H. Turner, C. Blick, E. H. Jenkins, G. Paul, H. J. Jones, H. S. Leonard, E. Mawley, and J. Fraser.

Messrs. Barr & Sons, Covent Garden, arranged an extensive display of hardy flowers. The Irises formed one of the chief features, and consisted of varieties of the pallida section, such as Astarte, Celeste, Princess Beatrice, and Walmer. In the L. neglecta section the best were Victorine, Madame Chereau, Virgine, and Miss Maggie, while the squalens type was represented by Dr. Bernice, Jacquinianna, and Salar Jung. In the variegata section Darius, Gracehus, and aurea, a rich chrome yellow. Ixias in variety, and Heuchera sanguinea were notable in the collection, as were also the Pæonies, Oriental Poppies, Aquilegias, and Pyrethrums.

Messrs. H. Cannell & Sons, Swanley, staged an admirable group of Cannas, arranged with Palms, Ferns, and Asparagus. They were mostly grown in 5-inch pots, and presented a bright appearance. Paul Lorenz, Roi des Rouges, Beaute Poitevine, Czar Alexander III., Ami Pichon, Provincial, President McKinley, and Duke of Marlborough were the pick of the crimson shades; while in the spotted and edged varieties were equally conspicuous, Queen Charlotte, Comte de Bouchand, Florence Vaughan, Admiral Avellan, Madame Pichon, and Duchess of York; while Ami J. Chrétien, Aurea, and Burbank were also good.

Messrs. G. Cooling & Sons, Bath, staged two boxes of their new garden Rose Purity, a charming flower, pure white, slightly pink in the centre, of good shape, and very floriferous, will be prominent as a garden Rose; also Cooling's Yellow Noisette, a yellow, of good shape and colour. The Tottenham firm of T. S. Ware, Ltd., presented a fine display of hardy flowers, comprising a rich collection, which contained many noteworthy plants. Liliun rubellum was in good form; Irises Madame Patti, Schiller, maerantha, Celeste, and Bridesmaid; Hieracium villosum was conspicuous, as were also the bunches of Pinks, Pyrethrums, Armerias, Poppies, and Delphiniums.

Mr. Maurice Pritchard, Christchurch, Hants, exhibited herbaceous plants in excellent style; the whole collection was remarkable for its freshness. The chief features were some excellent double Pyrethrums, such as Solfaterre, Florentina, Perfection, J. N. Twerdy, and La Vestale; Iris hispanica Beauty of Haarlem, a good white form, and Leander, a golden yellow. The bearded forms were well represented. A beautiful bunch of Orchis maculata, Mudeford variety, attracted much attention, as did O. foliosa. The pretty little Daisy, Bellis cœrulescens, with its heliotrope flowers, contrasted favourably with the gorgeous Poppies, Liliuns Gaillardias, and Pæonies.

Mr. Chas. Blick, gardener to Martin Smith, Esq., Hayes Common, staged a semicircular group of Carnations arranged with a background of Palms, and nicely edged with Ferns. The flowers were large, and the foliage all that could be desired. Mrs. Martin Smith, a grand silvery pink Malmaison, formed one of the chief varieties, while other noteworthy sorts were King Oscar, Calypso, Horace Hutchinson, Mrs. Trelawney, Mercia, Thora, Florizel, and Grace.

Messrs. F. Sander & Co., St. Albans, staged a table of new plants, chief of which were Canna Sander's Variegated, Caladium Countess of Warwick, Goodia elegans, a pretty decorative plant; Kentia Sanderiana, and Pandanus Sanderi; also two baskets of Carnation Lily Measures, with a fine plant of Acalypha Sanderiana in full beauty, also Cyperus fertilis, a quaint species, and Arcea Ilsemanni. Messrs. J. Carter & Co., High Holborn, staged a group of Gloxinias, which were bright, well flowered, and very varied, the spotted varieties being particularly good. The same firm also exhibited six bowls of Lily of the Valley grown from retarded crowns.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, presented a large collection of Irises, consisting of the germanica, pallida, neglecta, and hispanica sections. Some of the best varieties and species were I. pallida Albert Victor, a beautiful variety; I. p. dalmatica and delicata. In the germanica section Garrick, Faust, Louis Van Houtte, Madame Chereau, Hector, and Queen of May were the best. The Oriental Iris, with its deep blue flowers, with some varieties of the Spanish type, contributed to the display, while a collection of Ixias, Anemones, and Ranunculuses completed the display.

Messrs. R. Wallace & Co., Colchester, also staged a good collection of hardy flowers. The Liliuns were deserving of notice first, L. excelsum, L. rubellum, L. Thunbergianum in variety, L. longiflorum giganteum, and several of the umbellatum type were staged. The Iris siberica in variety, also some of the germanica and pallida types, were well arranged. The Calochorti were interesting and in great variety; Brodiaeas, such as Howelli, lilacina, capitata, Hendersonii, and ixioides were pretty, and a few specimens of Incarvillea Delavayi proved of much interest to the general public.

Mr. H. B. May, Dyson's Lane Nurseries, Edmonton, had a fine collection of hardy Ferns, including some nice specimens of Athyrium f.-f. furcillatum, purpurascens, Victoria, Veronia plumosum, elegans cristata, plumosum superbum, with some interesting Scolopendriums, Polystichums, Lastreas, Adiantums, and Blechnums, the whole edged with Ficus repens.

Messrs. Paul & Son, Cheshunt, staged a fine collection of Rhododendrons, Roses and hardy flowers, also some baskets of rock plants; these included some interesting plants, such as Viola palustris, Allium echenphrazum sibericum, Armerias, and Geraniums. The Rhododendrons comprised some beautiful forms, such as Princess, Mrs. R. S. Holford, H. W. Sargeant, Mrs. Hankey and Stella. The Roses were of the garden type, such as Carmine Pillar in fine form, Marquis of Salisbury, Double Pink Scottish, Blarii No. 2, and some of the hybrid Briars.

Messrs. G. Jackman & Son, Woking sent a collection of hardy flowers, also a number of single Roses and hybrid Briars. The Pyrethrums were bright and a good colour; the Oriental Poppies, Irises in variety, Pinks, Campanulas and Iceland Poppies, all contributed their share to the display. The Clematis coccinea hybrids were deserving of attention, while the Penzance Briars were much admired. The best were Lady Penzance, Meg Merrilees, Amy Robsart, Lord Penzance, and Julia Mannering.

A pleasing group of Ivies, chiefly of the arborea type, was sent by Mr. John Russell, Richmond, comprising many distinct kinds. H. helix arborea aurea, Silver Queen, palmata aurea, and aurea spectabilis were distinct and pretty. Mr. F. Cant, Colechester, exhibited a collection of garden Roses which were much admired. The Crimson China and the old common China are not to be despised as staged. Bardou Job, Papillon, Marquis of Salisbury, Reine Olga de Wurtemberg, Camoens, Gustav Regis, and Madame Chedane Guinoisseau were noteworthy, while the Austrian and Scotch Roses were excellent. The collection claimed a large amount of attention, showing that these garden varieties are likely to be as popular as the exhibition forms.

Mr. B. Ladham, Shirley Nurseries, Southampton, staged a collection of hardy flowers, in which the Pinks, Pyrethrums, and Irises were to the fore. The Pinks Diamond, Lizzie Dewar, and Caroline were good. The new Lupinus arboreus albus Snow Queen was distinct. The Heuchera sanguinea and Gaillardias were bright and showy. Messrs. Jas. Veitch & Sons, Ltd., presented a box of their hybrid Java Rhododendrons in excellent condition, the flowers were larger than usual, and the colours very attractive. Mr. Chas. Turner, Slough, staged a box of Carnations, including such varieties as Goldylocks, Rizzio, Edith, Lady Bristol, Galileo, Benbow, The Emir, and Chieftain.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, H. Dixon, de Barri Crawshay, H. Little, J. T. Gabriel, A. H. Smea, F. Sander, H. J. Chapman, A. Outram, E. Ashworth, T. W. Bond, J. Colman, J. G. Fowler, F. Mason, S. Courtland, H. T. Pitt, W. H. Young, and T. B. Haywood.

Cattleyas were most numerous in the group of Orchids contributed by Messrs. H. Low & Co., Bush Hill Park, Enfield. The plants were all well grown, and carried flowers of fine size, substance, and colour. There were also included a few examples of Odontoglossum crispum. The Cattleyas represented varieties of Mossiae and Mendeli. Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., East Sheen, sent a most effective group of Orchids. Not only was there excellence in the quality of the plants, but also in the arrangement. Lælia purpurata,

Cattleya Mossiae, *Odontoglossum vexillarium* memoria J. D. Owen, O. v. Empress, *Victoria Augusta*, crispum in variety; *Cypripediums* W. H. Young, *Cymatodes*, and *Gertrude Hollington*, with *Cattleya Warneri*, *Bifrenaria vitellina*, and others were most conspicuous.

Mr. H. Whiffen, gardener to J. Bradshaw, Esq., The Grange, Southgate, exhibited a small but very effective group of Orchids, all the plants showing capital culture. The examples of *Odontoglossum crispum*, *Cattleyas Mossiae* Mrs. Egerton Grey, Mrs. J. Bradshaw, and alba, with *Lycaste Deppii*, *Odontoglossum eittosum* and *Pescatorei* were perhaps the most attractive. Messrs Stanley Mobbs & Ashton, Southgate, arranged a bright group of Orchids, including *Marmodes pardinum*, *Odontoglossum crispum* in variety, *Miltania vexillaria* in variety, and several others.

Messrs. F. Sander & Co., St. Albans, staged *Laelio-Cattleya Ingrami* superba; Mr. J. Davis, gardener to J. Gurney Fowler, Esq., Woodford, *Cattleya Mossiae Victoria*, C. M. Glebelands variety, C. Mendeli J. Gurney Fowler, C. Eldorado splendens, and others; Messrs. J. Veitch and Sons, *Laelio-Cattleya Lucilia*, L. C. Eudora alba, and *Epidendrum langleyense*; and Mr. H. T. Pitt, Stamford Hill, *Cattleya Forbesi*, *Lælia tenebrosa Pittiana*, and *Promæa citrina*, Rosslyn variety. Mr. S. Cooke, gardener to de Barri Crawshay, Esq., Sevenoaks, staged an attractive group of *Odontoglossums*, including *O. crispum* Princess May (a superb variety), *coradinei* Crawshayanum, *O. crispum* White Emperor, and others.

The most charming group of Orchids in the Hall was undoubtedly that from Messrs. J. Veitch & Sons, Chelsea, who showed in splendid form. Amongst the most attractive flowers were *Lælia purpurata* Russelliana, L. purpurata, *Brassia verrucosa*, *Disa Veitchii*, *Angræcum modestum*, *Anguloa Ruckeri*, *Laelio-Cattleya Eudora*, *Cattleya Forbesi*, *Dendrobium snavissimum*, *Odontoglossum crispum*, *Epidendrum elegantulum* luteum, *Cœlogyne Dayana*, *Cymbidium Lowianum*, *Dendrobium Dearei*, *Cattleya Warneri*, *Oncidium divaricatum*, *O. macranthum*, *O. crispum*, *Sobralia Keinastiana*, *Odontoglossum cordatum*, *Cochlidia Noezliana*, *Spathoglottis anreo-Veillardii*, *Phalænopsis Ludde-vioacea*, P. John Seden, and *Trichoplia marginata*.

Amongst the very numerous growers of Orchids who contributed small exhibits were Mr. H. Ridden, gardener to G. W. Bird, Esq., West Wickham, who staged *Odontoglossum Andersonianum* Mrs. G. Bird, *O. crispum* Margaret Bird, and *O. c. Catherine Bird*; Mr. T. Rochford, Broxbourne, who staged *Odontoglossum Adriane* Rochfordianum; Mr. R. B. Leech, Dulwich, who sent *Epidendrum Wallisi*; Mr. R. G. Fletcher, Withdean, Brighton, who contributed *Odontoglossum crispum* Brighton Beauty and *O. c. Flore de Fletcher*; Mr. G. Day, gardener to H. F. Simonds, Esq., Beckenham, showed *Lælia purpurata* Simondsii; Messrs. J. MacBean & Co., Cooksbridge, *Cattleya Mendeli* Protheroeana; and Mr. H. Holbrook, gardener to E. Ashworth, Esq., Wilmslow, *Odontoglossum Adriane* Ashworthianum.

MEDALS.—Fruit Committee: Silver Banksian medal to Mr. S. Mortimer, and bronze Banksian medal to Mr. J. Miller. Floral Committee: Silver-gilt Flora medals to Messrs. F. Cant & Co., H. Cannell & Sons, and C. Blick; silver Flora medals to Messrs. T. S. Ware, Ltd., J. Russell, and H. B. May; silver Banksian medals to Messrs. J. Veitch & Sons, Paul and Son, R. Wallace & Co., M. Prichard, Barr & Sons, and F. Sander; bronze Banksian medal to Messrs. G. Jackman & Son. Orchid Committee: Gold medal to Messrs. J. Veitch & Sons, Ltd.; silver-gilt Flora medal to Mr. W. H. Young; silver Banksian medals to Messrs. H. Low and Co., Stanley Mobbs & Ashton, H. Whiffen, and de Barri Crawshay.

CERTIFICATES AND AWARDS OF MERIT.

Carnation Don Carlos (C. Blick).—One of the best yellow grounds we have seen. The colouring is bright rose (award of merit).

Carnation Lady Rose (C. Blick).—A superb rose coloured variety. The petals are of great size and the flower is very fragrant (award of merit).

Carnation Florizel (C. Blick).—This variety has size and substance of petal. The colour is very bright cerise. The variety is faintly clove scented, but inclined to split the calyx (award of merit).

Carnation Goldfinch (C. Turner).—This variety has a perfect petal. The colour is yellow (award of merit).

Carnation Agnes Sorrel (C. Turner).—A clove scented dark crimson variety of great size (award of merit).

Carnation Flack (C. Turner).—A splendid variety. The colour is yellow, with a peculiar red suffusion (award of merit).

Carnation Ossian (C. Turner).—A good Fancy. The ground is chrome yellow, with light and dark red markings (award of merit).

Carnation Galatea (C. Turner).—A finely formed yellow ground. The marginal colour is bright scarlet (award of merit).

Carnation Galileo (C. Turner).—A superb dark variety. The pale yellow ground colour is almost obscured by the crimson (award of merit).

Cattleya Eldorado Glebelands variety (J. Davis).—A richly coloured variety. The sepals and petals are intense rose purple. The fimbriated lip is maroon, and the throat deep yellow (award of merit).

Cattleya Mossiae Victoria (J. Davis).—This is a chastely beautiful variety. The sepals and petals are delicate rose, the latter being very broad. The handsome lip is white at the deeply fimbriated margin, with a flush of rose in the centre and yellow veined crimson in the throat (award of merit).

Cattleya Mendeli albescens (W. H. Young).—A very beautiful variety, pure white in colour save for the yellow throat (award of merit).

Epidendrum langleyense (J. Veitch & Sons).—This is a hybrid from a cross between *E. pseudopendulum* and *E. Wallisi*. The narrow stout sepals and petals are deep yellow, as also is the broad flat lip, which has crimson spots and shadings in the centre (award of merit).

Laelio-Cattleya Lucilia (J. Veitch & Sons).—This higenerie hybrid came from a cross between *Cattleya Dowiana* and *Lælia elegans*, and both parents may be seen. The sepals and petals are white with purple featherings at the tips. The lip is maroon on the front lobe, with white deepening to lemon and yellow in the throat (award of merit).

Lupinus arboreus albus Snow Queen (B. Ladlams).—This is a decided advance on the well-known type (award of merit).

Odontoglossum Adriane Ashworthianum (H. Holbrook).—A marvellously spotted variety. The white ground is almost wholly obscured by the brown blotches and spots (first-class certificate).

Odontoglossum coradinei Crawshayanum (de Barri Crawshay).—A finely marked variety. The yellow of the ground has large brown blotches and spots over the whole surface (award of merit).

Rhododendron Essex Scarlet (Paul & Son).—A variety of merit. The colour is rich crimson with black spots on the upper segments (award of merit).

Rose Purity (G. Cooling & Sons).—A variety of considerable value that received the gold medal of the National Rose Society in 1898 (award of merit).

Rose Yellow Noisette (Cooling & Sons).—A peculiarly fragrant Rose of soft yellow colour (award of merit).

NOTES ON ALPINE FLOWERS.

(Continued from page 283.)

CAMPANULA PLANIFLORA.

THOSE who are interested in the Campanulas will join with me in thanking the Rev. C. Wolley-Dod for his interesting note on page 294 regarding *C. planiflora*. Few have the long experience and wide knowledge he has of the Campanulas, so that his remarks are of much value. It would perhaps help us in the matter if he could give us the earliest reference he can find to the reputed habitat of the plant. If, as we are told, "botanical writers, from an early date in last century to this day, have followed one another in saying that it was found in the neighbourhood of Hudson's Bay," some one of these must have been almost, if not contemporaneous, with the date of the so-called introduction.

What is of more importance is Mr. Wolley-Dod's experience of its relation to *C. persicifolia*. Did the plants he purchased as *C. planiflora* (nitida) flower and appear to be the same as that before they passed into their *persicifolia* stage? Is it not possible that the supposed seedling from *C. persicifolia*, which has the characters of *C. planiflora*, may be from the latter? There is a strong presumption in favour of Mr. Wolley-Dod's view, that the forms of *C. planiflora* are stunted forms or hybrids of *C. persicifolia*. At the same time I have not before heard of them developing into *C. persicifolia*.

TOLMIEA MENZIESII.

The colour of this rather singular plant is sometimes described in catalogues as "terra-cotta." One has little difficulty in saying that this is rather misleading. "Greenish" is the adjective used by one work of reference, but perhaps the words green and brown express it better. Because of its ineffective colouring and its rather coarse habit it cannot be recommended for the alpine garden. It grows from 1 to 2 feet high. It is interesting from being a plant which reproduces itself very rapidly by means of small plantlets formed at the base of the radical leaves. The latter eventually rest on the soil, and the plantlets project their roots so as to enter the earth. By this means the *Tolmiea* soon covers a considerable space of ground. It comes from North-West America, and is quite hardy. At one time known as *Heuchera Menziesii*, or as *Tiarella Menziesii*, it was removed from these genera, and now forms a monotypic genus. It blooms in April and May. It may be grown in shade and in a light soil.

ANEMONE NEMOROSA VARIETIES.

It may be seasonable to direct the attention of some readers to a few of the more beautiful of the forms of our common Wood Anemone, which makes so beautiful many of our woods in spring. One would place among the first of these the double form, known as *A. nemorosa* fl.-pl., whose full flowers are highly appreciated. The double form known as *A. n. rosea* fl.-pl. is very beautiful with its rosy hued and white blooms. Very quaint looking is *A. nemorosa bracteata*, whose flowers are popularly known as those of the "Jack-in-the-green" Anemone, with their green bracts surrounding the pretty white blooms. There is also a very large flowered white form, which passes under various names. The coloured forms are exceedingly beautiful.

In some districts the Wood Anemone is more or less tinted with blue, and one of better colour than usual has been named *A. n. cœrulea*. This is very pretty, and worth growing. Another, still finer, is commonly known as *A. n. Robinsoniana*, or *A. n. cœruleseas*. It is of the highest type of beauty among the varieties of the species. *A. n. purpurea* is deeper and warmer than *A. n. cœrulea*, and *A. n. Alleni* is rather larger than *A. Robinsoniana*, with a shade of mauve in its colouring. *A. n. Vestal* has white anthers and petals. One cannot do better than imitate the conditions under which this Windflower is found in Nature. It likes partial shade and moisture, although in rockwork it will thrive with less of either than in the border. The varieties may be propagated by division of the tubers.

ARABIS ALPINA, FL.-PL.

For so many years has *Arabis alpina* been grown that it is remarkable that it has not before now given us more variety. What has for some time been wished for has at last occurred, and there is now in existence

a double form. It was shown at the Royal Horticultural Society's meeting on April 18th, 1899, and will, doubtless, be distributed by the trade in due time. Its principal advantages ought to be a better colour, and its lasting longer in flower, unless heavy rains lodging among the petals discolour these. It is to be hoped that it may prove as free-flowering as the type.—ALPINUS.

(To be continued.)

PLANTING VEGETABLES.

WHEN is the best time to plant the various kitchen garden crops that, from time to time, require removal from the seed beds to the quarters where they are expected to remain for permanent use? This is a question that has several times been asked, and is one to which anything but a general answer can be given; for, although it is customary to say "plant out after rain," the many failures we see from so doing would seem to imply that the advice must be acted upon with caution, or, in other words, it must be qualified to suit the circumstances of the case. We have all seen fine young stocks of Lettuces planted out in their final quarters disappear within a very few hours after, and beds of tender annuals have sometimes suffered a like fate, more especially if they be margined by a considerable breadth of grass, which forms a lurking place from which foraging parties of their enemies make nightly sallies, and carry away all that is most valuable. Now, this drawback amounts, in some instances, to the entire loss of a crop, or several crops in succession; nor are protective measures so effective as could be wished; it therefore becomes the inquiring mind to weigh well the benefits of planting after heavy rains, and the evils to which the system is exposed.

I have been so situated as to find it almost impossible to save my Brussels Sprouts and Greens, which it is customary to plant out early in June. I planted them out in wet weather, consequently I adopted the other extreme, and planted them out when the ground, as well as the weather was very dry, and usually with great success. The reason was obvious—a stiff retentive soil is the one most favourable to the production of slugs, the enemies of almost all young and tender vegetation: while a soil of an opposite kind is one of the best antidotes to their increase, the sharp gritty particles of which a sandy soil is composed being at variance with the locomotive powers of slugs, and they are less able to crawl about in search of food, and do not consequently exist in such numbers as in the more adhesive loams, better known in garden phraseology as heavy soils.

Now, as the slug exists in the stiff soil to a more dangerous extent than in the dry sandy one, we may reasonably infer that the planting operation ought to be done on the stiff soil in dry weather, in order that the plants may escape the ravages they would be subjected to were they planted out whilst it was wet, and apparently favourable to the plants growing well. A few dull days in the midst of dry weather are to be preferred, and to such plants as those of the large Cabbage family, which root rather deeply, there is seldom that lack of moisture in such soils as to render more than one watering necessary, while on dry, sandy, or gravelly soils of some districts they would want that assistance almost daily, in order to support themselves against the drying influence by which they are surrounded.

In planting out crops on these two soils it is easy to see that two different courses must be adopted—the stiff retentive one must be planted in dull weather, and when the surface of the ground is tolerably dry; while the sandy or gravelly soil must be planted, if possible, in a showery season, in order that the plants may derive the full benefit of that agent, on which they must look as affording them the most important portion of their daily food—*i.e.* atmospheric moisture. These reasons being given, it is easy to see when the best time has arrived for planting out the various Cabbageworts in summer.

It is next a matter of inquiry as to their size, and other particulars, and this is, also, tolerably easy to define; for a small, delicate plant, with its leafstalks elongated, so as to be unable to support the broad portion of its leaf, is not at all likely to withstand the sunshine of midsummer, or the drying effects of the dog days; but such a plant may be able to endure the change which is rendered comparatively easy, when performed at a time when both the ground and the atmosphere is saturated with moisture. It then speedily accommodates itself to the altered circumstances of its position, and those leaves, which, at planting out, were unable to hold up their proper side to the sun, quickly recover strength to do so, and that before any serious harm takes place from their reversed position, for the latter was done while the sun had comparatively little chance to injure them, the air being moist. Let it be observed that this operation must only be performed on ground that is tolerably free from such pests as prey on the young plants, otherwise its delicate condition, when in the state we have thus described, will speedily tempt them to its destruction. There is a class of plants less robust than the Cabbageworts, and equally, if not more, agreeable to the stomach of the voracious slugs; these must be differently treated, for they cannot well endure the scorching sunshine that the others can, neither are they so deep rooted as to penetrate below its influence; with these, therefore, some more stringent means must be adopted to drive out or keep at bay those enemies that are so likely to suffer from.

Usually repeated workings of the soil will effect that purpose; but when that has not been accomplished the addition of something or other as a repellant to them; for this, nothing is better than soot or wood ashes, which besides are excellent manures; but, in addition to their use, the ground must be made very fine, and, if it be very dry, it ought not to be

planted immediately after being watered; but after the top has got a little dry again, and when the plants are put in, and, if needs be, watered, take the precaution to scatter some dry ashes or other offensive substance over the ground to repel the invasion of the enemy. By this means it is likely the plants will get hold enough with the moisture which there exists to withstand the more trying part of the season without having recourse to the watering pot, which too often invites the depredators.

As much of the after success of a plant depends on its deriving all the advantages it can at planting time, and consequently avoiding all the evils, it becomes a matter of importance to select the most fitting time on which to perform these various operations; and not only that, but to watch them sedulously afterwards for some time. It is worse than useless to say that everything depends on the watering pot, for be assured that water, especially hard, injudiciously applied, is quite as likely to do harm as it is good.—N. J.

GOOSEBERRY CLUSTER-CUP FUNGUS.

ECIDIUM GROSSULARIE.

THIS parasite has been known to infest the Gooseberry, and in less degree the Red Currant since 1829, but how long anterior to that time it was recognised by botanists I do not know. Up to the year 1868 and 1869 the parasite was seldom heard of, still it occasionally occurred, and in some seasons was disastrous to the crop in a few localities. Since that period the fungus has been more recurrent and widespread, hence a few remarks respecting it may be useful.

The illustration, fig. 110, shows the fungus as it appeared under the microscope in the form of swollen patches on the leaves and fruit, received

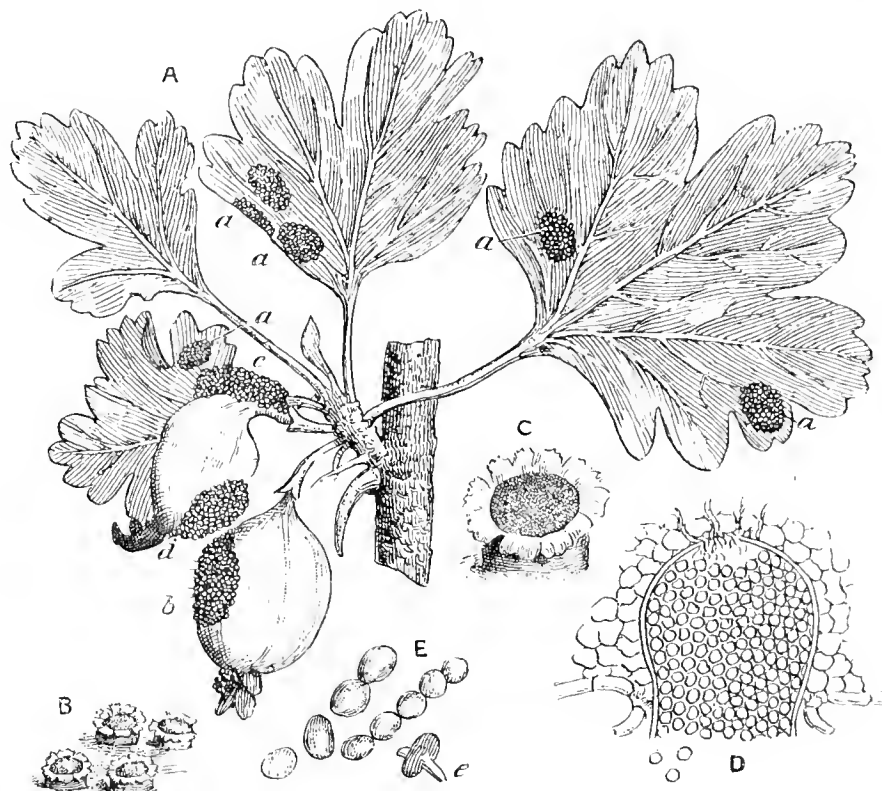


FIG. 110.—ORANGE FUNGUS ON GOOSEBERRY.

References.—A, spur in fruit (natural size), showing: a, spots on under side of leaves; b, fruit infested on side; c, berry attacked at heel; d, the same infested at nose. B, cluster-cups, enlarged 10 diameters. C, a cluster-cup magnified 30 times. D, section through peridium, enlarged 50 diameters. E, spores, magnified 260 times; e, spore germinating.

by the Editor from the county of Meath, in Ireland. It usually infests the Gooseberry during April, May, and June first, so far as I have observed, on the leaves, but sometimes both leaves and fruit simultaneously. On the leaves it occurs on the under side, represented in A at a natural size. The affected parts at first have a pale green colour, then yellow, and finally orange-red. The patches on the leaves are about $\frac{1}{4}$ inch across, considerably raised on the under side and correspondingly depressed on the upper surface of the leaf. On the fruit the fungus gives rise to swollen patches, and may infest it at the side b, the heel c, and nose d.

On the affected parts are numerous cluster-cups, shown enlarged ten diameters at B, and one magnified thirty times at C. Each cluster-cup, or peridium, has the sides formed of a single layer of cells, the hollow containing several erect branches springing from the mycelium, each consisting of chestnut brown rounded cells or spores, which are liberated by the mouth of the cup, shown, enlarged fifty diameters, at D. The spores, however, vary greatly in form through compression in the cup, some, enlarged 260 diameters, being shown at E, and one germinating, e.

The fungus renders the fruit unfit for use, and when the leaves are much infested greatly weakens the bushes. The affected fruit, therefore, should be promptly removed and burned, and the bushes sprayed with a solution of potassium sulphide, 1 oz. to 3 gallons of water, directing the spray upwards so as to reach the cluster cups on the under side of the leaves.

As a preventive the bushes should be sprayed in spring with the sulphide of potash solution at least once before the expanding of the leaves, at the strength just quoted, then before flowering with a solution at a strength of 1 oz. to 10 gallons of water, in this case spraying

upwards; then repeat again as soon as the fruit has fairly set, and not exceeding a strength of 1 oz. to 6 gallons of water if wet weather prevail, or if dry the strength before named, 1 oz. to 10 gallons of water. This treatment usually suffices, but in certain seasons it may be necessary to repeat the dressing. Mr. Graham's method of prevention was given on page 459, June 1st.—G. ABBEY.

NOTES ON PINES.

THOUGH Pines are not so largely grown as was once the case I am sending a few brief seasonable notes that may be of service to some readers of the Journal. I am not without hopes that they may regain a measure of popularity, as it cannot be disputed that well-grown fruits produced at home are infinitely superior to those that are sent us from abroad.

Fruit Ripening.—Though syringing the plants must cease when the fruit commences to colour, the supply of water at the roots should be continued as before when necessary, and to improve the quality and colour of the fruit ventilate liberally, but do not allow the temperature to fall below 80° in the daytime, gradually diminishing the moisture in the house, and maintaining a night temperature of 70° to 75°. Plants of Queens, Enville, and Providence started last February will ripen their fruit this month, whilst Smooth-leaved Cayenne and Charlotte Rothschild will require about a month longer to finish properly. Under the same conditions they furnish a successional supply of fruit, which may be still further extended by removing some of the fruiting plants to a cool airy place after the fruit is sufficiently advanced in ripening. The bottom heat should be maintained at 80° to 90°, those being the extreme points, but the more regular the heat at the roots the better.

Successional Plants.—The weather is not yet such as to safely dispense with artificial heat, but fires will not be required much longer, as the sun heat, by the assistance obtained from the heated beds in which the plants are plunged, rarely allows the atmospheric temperature to fall below 65°, which is more suitable for the satisfactory development of the plants than a higher temperature from fire heat. As recently potted plants make growth quickly, strict attention should be given to ventilation to prevent an attenuated growth, therefore admit air at 75° to 80°, increasing it until 85° is reached, and above that ventilate fully, diminishing in the afternoon, closing the house at a temperature of 80°. Afford a light sprinkling daily in the afternoon when bright weather prevails.

Starting Suckers.—From those on the early fruiting plants a sufficient number should be selected to meet the demand, and if started at once, the plants will be suitable for fruiting from this time onwards another season, and prove supplementary to those started in March, their requirements being identical, only shading must be more effectual.—G. A. H.

SALADS AND FRUITS.

FROM an article on "Cool Food for Hot Weather," in the *Daily News* we cite the following paragraphs:

"A spell of unusually hot weather makes a change in diet imperative if we are to adapt ourselves to the demands made upon us by heightened temperature. Nature is liberal in providing us with cooling and laxative foods at this season, if we are not too wedded to convention to try them. Make salads of everything that will lend itself to salad-making, but keep the Lettuce before you as a *pièce de résistance* at all times. The more succulent Lettuce we eat in hot weather, the better for our physical comfort. Some object to uncooked vegetables of any kind, much as they like salads generally. Let these people eat cold cooked Asparagus and Beans in salad form, as long as both are to be procured.

"*Apropos* of salads, a special mention should be made of those composed of fruit; this is a delicious mode of serving ripe fruit, and a mode by which we secure the full flavour and medicinal virtues thereof, which are sometimes lost or changed by cooking. The dressing of a fruit salad will, for the gourmet, be one of sweet wine with a soupçon of fine liqueurs, but ordinary people will be quite content with the juice obtained by stewing and straining a portion of other fruits with sugar, or cream may take the place of the fruit juice. A variety of fruits make a pleasanter salad than one kind alone, though when Strawberries are in question mixing these with another fruit is not to be allowed. One of the most delicious salads is that commonly met with in Parisian restaurants—and only rarely seen elsewhere—namely, the wild Strawberries of the woods, dressed with claret. Our own 'small scarlets' may make a fair imitation of this, but they have not the delicate aroma of the wild berry. Following on Strawberries, ripe Currants, mixed with Raspberries, make another good combination, and shced Apricots, with stoned Morello Cherries, still another.

"A diet largely composed of fruit, vegetables, and milk will keep the blood cooler and the system better nourished than any number of so-called cooling drinks, or other preparations. One of the greatest mistakes we can make in hot weather is to partake of ices, iced dishes, or iced drinks. Though the immediate effect felt after swallowing these may be one of coolness and refreshment, yet this quickly gives place to one of increased heat, and often induces an almost parched feeling in the mouth. Follow Nature as closely as possible, and her guidance will invariably bring about the best results.

"In addition to cooling properties, Nature's remedies provide just those phosphates and tonics that the physical man craves most in summer heats. Potash salts, magnesia, lime, and iron—all these are largely present in all the vegetables and fruits, but more especially in some, and for all

these a great demand is daily created. In Spinach we have iron in a very marked degree, also in all the red and black fruits—to wit, Red and Black Currants, Raspberries and Blackberries. Those who suffer from poverty of blood would do well to make Black Currants their standard fruit. In Cabbage, Peas, green Gooseberries, and Green Gages we have more phosphates and lime than iron; abundant nourishment of a light and easily digested kind we have in Mushrooms, Beans, and well cooked Potatoes. From Tomatoes, Marrows, Cucumbers, Melons, and all lush fruits we gain water that largely does away with the necessity for much drink; where free use is made of these thirst will never be felt to any great degree. It is false economy that spares the money that fruit and fresh vegetables cost; better far would it be to spend money this way than in drink of any kind."

WEST HALL, BYFLEET.

THIS very interesting and pretty estate, the residence of F. C. Stoop, Esq., lies on the right hand side of the road leading from Byfleet Station to the village of that name, and is about midway between Weybridge and Woking. The gardener, Mr. G. Carpenter, who has been in this situation about five years, was, oddly enough, some nine years in the employ of Major C. Browne, who has the adjoining estate, so that he seems closely attached to the locality.

During his stay at West Hall Mr. Carpenter has, in conjunction with Mr. Stoop's liberal expenditure, effected great improvements, amongst others being a clean sweep of the old glass houses, and the erection in their place by Messrs. Burton & Sons of a good range of lean-to's as vineries, and three long span plant, Peach, Melon, and Tomato houses, comprising several compartments. Then there has been an entire replanting of the walls with fruit trees, wiring of garden walks, and planting these with espaliers, general opening and improving of the pleasure grounds, and many other capital alterations, so that the place is greatly changed, whilst every year now helps to effect material developments.

Though the place is flat, it is both well timbered and watered. Rhododendrons are there a truly grand feature; many of these seem as though planted a century since, for in various directions such masses have they become that arched walks have been formed beneath them, and the wood growth is dense as a thicket. A short avenue of Cedrus deodara in front of the house shows some truly noble specimens, such as are rarely seen; whilst on the roadside there are Wellingtonias in quantity, such as can be rarely equalled anywhere in the kingdom.

THE GLASS HOUSES.

The vinery range is 110 feet long by 15 feet wide. There are three compartments, the centre, and earliest forced being the largest. This is planted with Black Hamburgh Vines chiefly, a few Buckland Sweetwater and Foster's Seedling completing. These Vines have been nearly three years planted, and are carrying excellent crops, many bunches having been already cut. A few pot Vines assist as supernumeraries to furnish fruit on the uncropped spaces. In one end house Madresfield Court, Gros Colman, Gros Maroc, Lady Downe's, and Black Alicante all doing remarkably well, and in the other end Muscat of Alexandria Vines also carrying a good crop, and capital bunches furnish the house. It is noticeable that very free lateral and especially top growth is allowed to all the Vines, the object being to excite active root action. Of course with comparatively young Vines there is yet ample room for such free growth.

There is a fine span Peach house, 90 feet by 15 feet. It is planted with eight permanent trees on each side, but there are a few supernumeraries at present. All these are in excellent condition, full of wood and clean leafage, yet not of excessive growth, whilst in almost every case there are good fruit crops. The arrangement of the varieties answers admirably to produce a long succession without starting portions in compartments, for there are none. Peaches comprise Waterloo, all gathered; Hale's Early, just ripe, and one of the very best of the earliest; Royal George, Barrington, Violette Hâtive, Walburton Admirable, and Princess of Wales. Nectarines are Rivers' Early, Précoce des Crouels, Lord Napier, Humboldt, Pine Apple, Stanwick Elrige, and Victoria. There have been numerous trees in pots fruited also.

PLANTS.

The other houses are in compartments, in which are seen in one case a good collection of Orchids, in another table and room plants, in a third fine foliage and various stove plants, in a fourth greenhouse plants, including, as may also be seen in the conservatory, numerous Canterbury Bells, both white and rose coloured, grown here for a long succession in great numbers in pots, and very beautiful they are so treated. In one house Eucharis amazonica planted out in enclosed brick beds does finely, blooming profusely. Another division is devoted to Melons and Cucumbers, and yet a farther one to Tomatoes. These are planted on narrow raised turf beds on each side, and are trained up under the glass roof; all are in capital condition. The earliest supply of fruit has been obtained from pot plants. These are just getting over as the others are carrying ripe fruits. The principal variety is Polegate.

In all the plant houses climbers form telling features. Stephanotis, Allamanda Hendersoni, Dipladenia amabilis, Gloriosa superba, Clerodendron Balfourianum, Passiflora princeps, and one of the loveliest of all, carrying small but great numbers of trusses of pretty yellow flowers, Stigmaphyllon ciliatum. Very recently the Night-blooming Cereus was a striking and attractive feature, flowering in one house. There is a nice conservatory adjoining the mansion, that is kept full of flowers.

and is luxuriantly draped with climbers. The pleasure grounds are not extensive, but are admirably kept, and include some pretty semi-aquatic aspects beneath the overhanging trees.

CHRYSANTHEMUMS.

Although not now an exhibitor of these flowers, Mr. Carpenter was a successful one not very long since. But like the most ardent exhibitors, he grows a big collection of plants, and not content with having named varieties, has raised not a few fine seedlings. Seed is obtained by careful fertilisation, employing only the very best, cutting over the petals to such a convenient depth that when the stigmas are fully developed they project just above the severed florets, and are in that way fertilised with pollen taken from other flowers. In this way a fine stock of plants has been raised, and all the selected ones are being again grown this season, that they may be fully tested before being offered in commerce. Where there are from six to ten plants of a seedling variety thus grown, it is evident that a sounder idea can be obtained as to the real merits of a variety than is possible when the seedling plant only is flowered. Were more care taken in this respect fewer failures would result.

It need hardly be said that a look over these seedlings at West Hall when in bloom next November should be of a very interesting nature. They will be none the less of interest because from seed saved on the place and not obtained by purchase. Were many growers to follow Mr. Carpenter's example, seedling varieties, now plentiful, would become thick as leaves on Vailambrosa. No doubt ample opportunities will be furnished for a look at them in due course.

KITCHEN GARDEN.

By some solid brick projections, which stand out fully 12 feet from the main walls across the borders, the chief walls are broken into sections, and these, on the south aspect, are planted with Peaches, Nectarines, and Apricots respectively, the trees being about three years established. All are doing admirably, and seem to appreciate the wind-breaks thus produced. On other walls Pears and Plums are similarly planted. Running right across the garden, from north to south, are two 7 feet wide walks; each of these is covered with wired trellis some 8 feet wide at base and 7 feet in height. One walk is planted with twenty-eight Apple trees, 14 feet apart, the other with Pears, all horizontal trained, and now some 8 to 9 feet across. These should in time make admirable garden features. The walks are midway bisected by another broad one, that is planted on each side throughout with some three or four rows of Carnations, and both run at the extreme end into a fine broad walk, flanked with hardy perennials, of which there is a first-rate collection.

Bush fruits and Strawberries are well grown, with excellent promise on all. The Black Currant mite is kept well down by careful picking over in the winter. Vegetables are plentiful and good. The soil is a semi-sandy loam, characteristic of the county of Surrey, in which, however, everything seems to thrive very well. A pleasing feature beneath some pollarded Filbert trees is a mass of Aquilegias, many of which, including the charming hybrids, are abundant. The general state of the gardens is excellent.—A. D.

ROYAL NATIONAL TULIP SOCIETY.

NORTHERN SECTION.

ALTHOUGH the vagaries of the alleged spring had wrought sad havoc and devastation amongst the Tulips of many unfortunate growers, there was a surprisingly good display of specimens of this favourite May flower exhibited at the Coal Exchange, Manchester, on Friday, June 2nd last.

The Rev. F. D. Horner took premier honours with fine, well grown, attractive specimens, yet his competitors were left but little in the rear; indeed, we do not remember to have seen flowers of better quality exhibited for many years. In Class 1, which is rather an exacting one to satisfy, all the four stands were of great merit, any one of them being quite worthy of a first prize.

Breeder Tulips were rather scarce, though several beautiful examples were on view. Amongst the named flowers Samuel Barlow was very prominent, blooms of Sir Joseph Paxton were not so numerous, Annie McGregor was hardly in as good form as usual. The flamed byblomems were rather a weak class. Of feathered Tulips there were several good examples in Trip to Stockport, Annie McGregor, Sulphur Bessie, and George Hayward put in one of his rare appearances.

The room in which the Tulips were exhibited was a very convenient and excellent one for the purpose, tastefully decorated with foliage plants kindly lent by Mr. Bentley, the Society's indefatigable Secretary. Though the day proved a very enjoyable one to the lovers of the flower, the attendance of the public was not so numerous as one reads of at a football match.

Class 1. *Twelve dissimilar Tulips, two feathered and two flamed in each class.*—First, Rev. F. D. Horner, Burton-in-Lonsdale, with Samuel Barlow and Paxton, flamed, Masterpiece and Paxton, feathered bizarres; Talisman and Adonis, flamed, Lady Harcourt and Camp's Seedling, feathered byblomems; Annie McGregor and Mabel, flamed, A. McGregor and Mrs. Atkin, feathered roses. Second, Mr. J. W. Bentley, Kersal, with Paxton and S. Barlow, flamed, Paxton and Sulphur, feathered bizarres; Talisman and Universe, flamed, Foster's Seedling and Bessie, feathered byblomems; A. McGregor and Mabel, flamed, Mrs. Collier and Mrs. Atkin, feathered roses. The Samuel Barlow in this stand was awarded the premier prize for the best flamed Tulip in the whole exhibition. Third, Mr. C. W. Needham, Royton, with Samuel Barlow and Wm. Lee, flamed, Attraction and Wm. Annibal, feathered bizarres; Adonis and Elizabeth Pegg, flamed, Trip to Stockport and Elizabeth Pegg, feathered byblomems; Aglaia and Mabel, flamed, Mrs. Atkin

and Mabel, feathered roses. The premier prize for the best feathered Tulip was awarded to the specimen called Trip to Stockport exhibited in the above stand. Fourth, Mr. A. Moorhouse, Wakefield, with Paxton and Hepworth's Seedling, flamed, Masterpiece and Paxton, feathered bizarres; May Queen and Bridesmaid, flamed, Bertha and Trip to Stockport, feathered byblomems; A. McGregor and Mrs. Bright, flamed, Modesty and Miss Nightingale, feathered roses.

Class 2. *Six Tulips, one feathered and one flamed of each class.*—First, Rev. F. D. Horner with Paxton, and Masterpiece feathered; Adonis and a seedling feathered; Annie McGregor, flamed and feathered. Second, Mr. Needham with Wm. Lee, and Masterpiece feathered; Elizabeth Pegg, and Trip to Stockport feathered; Mabel, and Mrs. Collier feathered. Third, Mr. Bentley with Paxton, and Rifleman feathered; Talisman, and Mrs. Cooper feathered; A. McGregor, and Modesty feathered. Fourth, Mr. Moorhouse with Dr. Hardy, and Masterpiece feathered; Talisman, and Bessie feathered; A. McGregor, and Modesty feathered. Fifth, Mr. Wm. Mellor, Wakefield, Paxton, feathered; and flamed Mrs. Jackson and G. Hardwick, A. McGregor and S. Headley. Sixth, Mr. J. H. Wood, Middleton, Paxton, and a seedling feathered; Talisman and Alice Grey, Mabel and Modesty. Seventh, Mr. Dymock, Stockport, King and Masterpiece, Adonis and Bessie, Mrs. Moores, and a seedling feathered.

Class 3. *For 10s. 6d. subscribers only.*—First, Mr. G. Eyres, Ripley, with Dr. Hardy, and Lord Lilford feathered; Mabel, and Count feathered; Jeanette, and Adonis feathered. Second, Mr. W. Prescott, Bedford Leigh, Paxton and Lilford, A. McGregor and Seedling Talisman, and Violet Amiable.

Class 4. *Three feathered Tulips.*—First, Mr. Bentley with Lord Stanley, Bessie, and Alice. Second, Mr. Moorhouse with Paxton, Bertha, and Alice. Third, Mr. Needham with Albert, Trip to Stockport, and Modesty. Fourth, Mr. Buckley, Paxton, Trip to Stockport, and Modesty. Fifth, Mr. Woods, Paxton, Bessie, Modesty. Sixth, Mr. Mellor, G. Hayward, J. Henry, Modesty.

Class 5. *Three flamed Tulips.*—First, Rev. F. D. Horner, Paxton, A. McGregor, and a Talisman-like seedling. Second, Mr. Needham, S. Barlow, Aglaia, Mrs. Jackson. Third, Mr. Mellor, Paxton, A. McGregor, and Mrs. Jackson. Fourth, Mr. Moorhouse, Paxton, A. McGregor, and Talisman. Fifth, Mr. Wood, Paxton, A. McGregor, and Talisman. Sixth, Mr. Bentley, Paxton, Denman, and A. McGregor.

Class 6. *For maiden growers only, one feathered and one flamed Tulip.*—First, Mr. G. Eyres, Ripley, with Paxton, and Heroine feathered. Second, Mr. T. Buckley, Staleybridge, Paxton, and Masterpiece feathered. Third, Mr. Mallinson, Middleton, Paxton and Modesty.

Class 7. *One feathered and one flamed Tulip.*—First, Samuel Barlow memorial prize, Mr. C. W. Needham with Lord Stanley, and Bertha feathered. Second, Rev. F. D. Horner, Dr. Hardy and Modesty. Third, Mr. Eyres, Paxton and Heroine. Fourth, Mr. Dymock, A. McGregor and P. Hart. Fifth, Mr. Wood, Paxton and Heroine. Sixth, Mr. Bentley, Dr. Hardy, and Paxton feathered.

Class 8. *Single Blooms.*—

Feathered Bizarres.

- 1 Rev. F. D. Horner with Paxton
- 2 Mr. Moorhouse with Masterpiece
- 3 Mr. Moorhouse with John Ratcliffe
- 4 Mr. Moorhouse with Wm. Annibal
- 5 Mr. Bentley with Lord Stanley
- 6 Mr. Needham with Albert
- 7 Mr. Bentley with Devonshire
- 8 Mr. Bentley with Hy. Lowe
- 9 Mr. Bentley with Lord F. Cavendish
- 10 Mr. Eyres with Lord Lilford

Feathered Roses.

- 1 Mr. Bentley with Count
- 2 Mr. Bentley with Count
- 3 Rev. F. D. Horner with Industry
- 4 Mr. Bentley with Jane
- 5 Rev. F. D. Horner with S. Headley
- 6 Mr. Bentley with Modesty
- 7 Mr. Bentley with Julia Farnese
- 8 Mr. Prescott with Aglaia
- 9 Mr. Bentley with Alice
- 10 Mr. Bentley with Arlette

Feathered Byblomems.

- 1 Mr. Moorhouse with Bessie
- 2 Mr. Moorhouse with Bessie
- 3 Mr. Moorhouse with Trip to Stockport
- 4 Mr. Needham with Adonis
- 5 Mr. Needham with Talisman
- 6, 7, 8, and 10, Mr. Bentley
- 9 Mr. Moorhouse

Flamed Bizarres.

- 1 Rev. F. D. Horner with Samuel Barlow
- 2 Rev. F. D. Horner with Paxton
- 3 Mr. Needham with Dr. Hardy
- 4 Mr. Moorhouse with Samuel Barlow
- 5 Mr. Bentley with Prince of Wales
- 6 Rev. F. D. Horner with Ajax
- 7 Rev. F. D. Horner with Orion
- 8 Mr. Bentley with San José
- 9 Mr. Needham with Wm. Lee
- 10 Mr. Needham with Lord Stanley

Flamed Roses.

- 1 Mr. Eyre with A. McGregor
- 2 Rev. F. D. Horner with Mabel
- 3 Rev. F. D. Horner with Aglaia
- 4 Rev. F. D. Horner with A. McGregor
- 5 Mr. Bentley with Tryphena
- 6 Mr. Mellor with Madame St. Arnaud
- 7 Mr. Bentley with Triomphe Royale
- 8 Mr. Prescott with Seedling
- 9 Mr. Prescott with Mrs. Collier
- 10 Mr. Wood with Sarah Headley

Flamed Byblomems.

- 1 Rev. F. D. Horner with Mrs. Cooper
- 2 Rev. F. D. Horner with Sutherland
- 3 Mr. Dymock with Universe
- 4 Mr. Bentley with Chancellor
- 5 Mr. Horner with Talisman
- 6 Mr. Needham with Adonis
- 7 Mr. Bentley with Seedling
- 8 Mr. Bentley with Litchurch
- 9 Mr. Bentley with Denman
- 10 Mr. Eyres with Mrs. Jackson

Class 10. *Six dissimilar breeder Tulips, two of each class.*—First, Rev. F. D. Horner with R. Yates and Paxton, Mrs. Barlow and a seedling rose, two seedling byblomems. Second, Mr. Bentley, Goldfinder and Lloyd's 47, Adonis and Litchurch, Rose Hill and Mrs. Barlow. Third, Mr. Moorhouse with Goldfinder and Paxton, Talisman and Bridesmaid, Rose Hill and Mrs. Barlow. Fourth, Mr. Wood with Excelsior and Paxton, Wm. Parkinson and Alice Grey, Rose Hill and A. McGregor. Fifth, Mr. Needham with R. Yates and Goldfinder, Adonis and Seedling, Rose Hill and A. McGregor. Sixth, Mr. W. Mellor, Wm. Lee and J. Goodhouse, Talisman and Elizabeth Pegg, A. McGregor and Industry.

Class 11. *Three breeder Tulips.*—First, Rev. F. D. Horner, Paxton, A. McGregor and a seedling. Second, Mr. Needham, Samuel Barlow, Mrs. Barlow and Bridesmaid. Third, Mr. Mellor, Paxton, Mrs. Barlow and seedling. Fourth, Mr. Moorhouse, Paxton, Talisman and Annie McGregor.

Fifth, Mr. Bentley, Lloyd's 47, Rose Hill, Leech's No. 1. Sixth, Mr. Dymock. Seventh, Mr. Prescott. Eighth, Mr. Eyres.

Class 12. *Single blooms. Breeders.*
Bizarre Breeders.

- 1 Mr. Bentley with Lloyd's 47
- 2 Mr. Moorhouse with Wm. Wilson
- 3 Mr. Needham with Samuel Barlow
- 4 G. Eyre with Sulphur
- 5 Rev. F. D. Horner with Seedling
- 6 Rev. F. D. Horner with Storer's "3 A"
- 7 Rev. F. D. Horner with Paxton
- 8 Mr. Bentley with Lloyd's Seedling

Rose Breeders.

- 1 Rev. F. D. Horner with A. McGregor
- 2 Rev. F. D. Horner with Mad. St. Arnaud
- 3 Rev. F. D. Horner with Mrs. Barlow
- 4 Rev. F. D. Horner with Rosy Morn
- 5 Mr. Bentley with Rose Hill
- 6 Mr. Bentley with Mabel
- 7 Mr. Bentley with Loveliness (a Darwin)
- 8 Mr. Mellor with Geo. Hardwick

Byblumen Breeders.

- 1, 2, 3, and 4 Rev. F. D. Horner with Seedlings
- 5 Mr. Bentley with Agnes
- 6 Mr. Bentley with W. Parkinson
- 7 Mr. Eyres with Lizzie
- 8 Mr. Mellor with Talisman.

The Best Breeder Tulip.—Lloyd's 47 Seedling, shown by Mr. Bentley in his stand.

The seedlings exhibited by the Rev. F. D. Horner were all of his own raising and of the finest and purest quality.

SOUTHERN SECTION.

The following are the details of the exhibition, held under the auspices of the Royal Botanic Society, Regent's Park, May 17th, which we were unable to obtain earlier.

The premier prize, a silver cup specially designed by Mr. H. G. Moon, and presented by Messrs. Barr & Sons, bulb growers, of King Street, Covent Garden, and Long Ditton, Surrey (open to all amateurs and gentlemen's gardeners, losing stands may compete in classes A and F, *eighteen dissimilar Tulips, two feathered, two flamed, and two breeder Tulips of each class*) was awarded to Mr. J. W. Bentley, Kersal, Manchester, who exhibited Clio and Annie McGregor flamed, Julia Farnese and Mabel feathered, Rose Hill and A. McGregor breeder roses; Excelsior and San José flamed, General Grant and Masterpiece feathered, Excelsior and Goldfinder breeder bizzarres; Chancellor and Othello flamed, Ashmole's 126 and Adonis feathered, Adonis and William Parkinson breeder roses.

Class A. *Twelve dissimilar rectified Tulips, two feathered and two flamed in each class.*—First, Mr. A. D. Hall, Wye, Ashford, with Samuel Barlow and Paxton flamed, Lord F. Cavendish and Paxton feathered bizzarres; Annie McGregor and Aglaia flamed, S. Headley and Count feathered roses; Geo. Edward and Adonis flamed, Trip to Stockport and Proserpine feathered byblomens. Second, Mr. C. W. Needham, Ryton, with Samuel Barlow and Paxton flamed, Masterpiece and Paxton feathered bizzarres; A. McGregor and Aglaia flamed, Clio and Miss Edwards feathered roses; Sutherland and Talisman flamed, Talisman and Bessie feathered byblomens. Third, Mr. A. Chater, Cambridge, with Paxton and Dr. Hutcheon flamed, Richard Headley and Paxton feathered bizzarres; S. Headley and Aglaia flamed, Modesty and S. Headley feathered roses; Mrs. Jackson and Sutherland flamed, Black Prince and Guido feathered byblomens.

Class B. *Six dissimilar rectified Tulips, one feathered and one flamed in each class.*—First, Mr. Bentley, San José, and Masterpiece feathered bizzarres; Trip to Stockport, feathered and flamed byblomens; and Mabel, and Julia Farnese feathered roses. Second, Mr. Hall, Samuel Barlow, and Attraction feathered bizzarres; Sutherland, and Adonis feathered byblomens; Aglaia, and S. Headley feathered roses. Third, Mr. Needham, Paxton, and Masterpiece feathered bizzarres; Sutherland, and Adonis feathered byblomens; Aglaia, and Mabel feathered roses. Fourth, Mr. Chater, Dr. Hutcheon, and Masterpiece feathered bizzarres; Mrs. Jackson, and Black Prince feathered byblomens; Aglaia, and S. Headley feathered roses.

Class C. No exhibit.

Class D. *Three feathered Tulips, one of each class.*—First, Mr. Bentley, Masterpiece, Guido, and Modesty. Second, Mr. Chater, Masterpiece, Adonis, and Modesty.

Class E. *Three flamed Tulips, one of each class.*—First, Mr. Hall, Dr. Hardy, Talisman, and Aglaia. Second, Mr. Bentley, Lord Stanley, Trip to Stockport, and Aglaia. Third, Mr. Needham, Samuel Barlow, Talisman, and A. McGregor. Fourth, Mr. Chater, Dr. Hutcheon, Sutherland, and Aglaia. Fifth, Mr. G. Edom, Walton-on-Hill, Masterpiece, Ashmole's 126, and Aglaia.

Class F. *Six dissimilar breeder Tulips, two of each class.*—First, Mr. Hall, with Goldfinder and Wm. Lea bizzarres; Lady Grosvenor and A. McGregor, roses; Talisman and Adonis, byblomens. Second, Mr. Needham, with Goldfinder and W. Lea, A. McGregor and Mabel, Elizabeth Pegg and Ashmole's 112. Third, Mr. Chater, with Paxton and Goldfinder, Modesty and A. McGregor, Agnes and Headley's 42.

Class G. *Three dissimilar breeder Tulips, one of each class.*—First, Mr. Hall, with John Heap, Orleans, and A. McGregor. Second, Mr. Bentley, with Ashmole's 126, Queen of England, and Goldfinder. Third, Mr. Edom, with Masterpiece, Mrs. Hardy, and Queen of England. Fourth, Mr. Needham, with Goldfinder, Mabel, and Talisman. Fifth, Mr. Chater, with Lord Lilford, Mrs. Barlow, and Maid of the Mill.

Best feathered Tulip.—Mr. Chater, with R. Headley.

Best flamed Tulip.—Mr. Hall, with Geo. Edward.

Best breeder Tulip.—Mr. Hall, with Adonis.

Class H. *The "Samuel Barlow" prizes for the best pair of rectified Tulips; one feathered and one flamed of any class.*—First, Mr. Needham with Samuel Barlow and Modesty. Second, Mr. Bentley with Lord Stanley and Julia Farnese. Third, Mr. Hall with Paxton and S. Headley. Fourth, Mr. Chater with Dr. Hutcheon and Miss Nightingale.

For a Collection of May flowering decorative Tulips, Darwins, and others.—The silver medal of the Royal Botanic Society was awarded to Messrs. Barr and Sons, King Street, Covent Garden.

The gold medal of the Royal National Tulip Society was awarded to Messrs. Barr & Sons for their display of English Florist Tulips of all classes.—C. W. N.

THE YOUNG GARDENERS' DOMAIN.

THE BOUVARDIA.

JUDGING from the specimens that one sometimes sees it might be supposed that Bouvardias were difficult to cultivate; such, however, is not the case, and good bushy plants may be easily grown if the few simple requirements are understood and carefully attended to. Let us start with old plants that have bloomed and have been allowed a period of rest. These must be cut back, and be placed in the intermediate house or stove, and syringed daily, to encourage growth. If they are to be retained they must be repotted as soon as they have started into growth, reducing the old ball, and placing them in pots just large enough to allow of a little fresh soil being placed round; put the plants in a moist warm house, and syringe every day.

If large specimens are not required it is preferable to raise fresh plants each year, as these can be rapidly grown to serviceable size, and will produce blooms of better quality more freely than old ones. Cuttings should therefore be taken when the growths are about 2 inches in length, inserting them round the sides of clean well-drained 4-inch pots filled with a light open compost. When the cuttings are in place apply water, and stand the pots in a close propagating case, keeping moist and shaded. When well rooted afford as light a position as possible, but shade from bright sun until they become hard. At the first opportunity transfer them to 3-inch pots, in a compost of loam, leaf soil, peat, and sand in equal parts, replacing in a moist warm house.

With renewed root action pinching to the first pair of leaves must be done, and lateral growths may be stopped at about two joints until sufficiently bushy plants are produced; they should not, however, be stopped later than the first week in July. As the plants increase in size, and the pots become full of roots, they must go to the flowering sizes, 5 or 6 inches being large enough, according to the strength of the plants. Employ a compost of two parts of fibrous loam, one part each of leaf soil, peat, and sand, adding a little well-decayed manure. Let the pots be well drained, and when the work is finished return to the intermediate house, giving abundance of water, and syringing daily to prevent attacks from red spider or green fly.

When well established in the flowering pots weak liquid manure can be applied once a week. Towards the end of July remove the plants to a cool house or frame, and when hardened afford plenty of air, so that the growths may be well matured. Before the advent of frost remove them to a house where they can have the benefit of a little heat should the weather be cold and wet. At intervals of two or three weeks place a few plants into heat, so as to obtain a succession of these useful flowers during the winter months.—S. P.

CELERY CULTURE.

THE seeds for the main crop of Celery should be sown not later than the middle of February, though for later plants a few seeds may be sown a month after. If new the seeds germinate quickly in light soil slightly covered, and the pans or boxes plunged in bottom heat. When the seedlings have made their second leaf they should be pricked off about 2 inches asunder in boxes, if no frames or hotbed material is available, and be kept in a light position, and be gradually hardened until the plants are quite strong.

Do not let the plants crowd each other, but prepare some more frames, preferably with a hard bottom, such as are used for standing pot plants in. Place in about 3 inches of decayed manure, and over this 3 inches of soil; transfer the plants, 4 inches apart, to these frames from the boxes, shade and admit air carefully for a few days after being planted, but when growth is seen to advance give abundance, and by the middle or end of May, if the weather is warm, the lights are best off. Some give much warmer treatment than I am advocating, and get plants ready to put out in the trenches by the third week in May, but little is gained by the method.

The trenches should be 15 inches deep, and not less than 4 feet asunder. Place a good quantity of decomposed manure at the bottom of each, and cover with 3 inches of soil. Put out 9 inches apart, with good balls of soil and roots, when the plants are quite ready. The ridges between the trenches will grow excellent crops of Lettuce if prepared early enough. If the weather is hot and dry liberal quantities of water will be required to keep them growing freely.

When the plants are about 1 foot high clear them of side growths, and tie loosely to prevent the outer leaves being broken; in about three weeks retie the plants higher up, and add a few inches of soil round them. Give liquid manure if possible weekly, and earth the plants fortnightly until finished, always being careful to keep the soil out of the crowns. If worms or other insects are troublesome use plenty of burnt garden refuse round the stems, as this will then keep much cleaner. For exhibition purposes brown paper is admirable for blanching the stems; in fact, our leading exhibitors always use it.—FOREMAN N.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea.—*Plants.*

Dammann & Co., Naples.—*Seeds and Bulbs.*

Mauger & Co., Guernsey.—*Bulbs and Tubers.*

W. Peed & Son, West Norwood.—*Caladiums.*

Pynaert-Van Geert, Ghent (A. Outram, 7, Moore Park Road, Fulham, agent).—*Special Wholesale List.*



FRUIT FORCING.

Cucumbers.—When the night temperature can be kept from falling below 65°, fire heat may be dispensed with. Continue to look over the plants twice a week, well thinning the old growths, and train young in their place. Avoid overcrowding and overcropping, and remove the fruit when fit to cut. Supply liquid manure twice a week, and surface dress with lumpy loam as required. Sprinkle the bed occasionally with sweetened horse droppings, but be careful not to overdo it, or the foliage will suffer irreparable injury. Syringe on clear days in the afternoon only, but keep a good moisture in the house all day by damping the paths, floors, and walls as they become dry. Morning syringing is often the cause of much injury, and if practised at all it should be done early and lightly. Promptly shade on bright weather succeeding a dull period, but at other times only to prevent flagging. Ventilate early, but avoid draughts, and never admit air to lower the temperature. Keep through the day at 75° to 90°, as the force of solar heat dictates; but in bright weather between 80° and 90° should prevail in the house from 8 A.M. to 6 P.M. Close early, so as to increase to 90°–100°, and admit a little air before nightfall as a safeguard against condensed moisture, and increase the ventilation from seven to eight o'clock on sunny mornings.

Pits and Frames.—Unless the weather prove cold night coverings will not be necessary; if put on, it must not be until the sun is off the lights, and it should be withdrawn early in the morning. Commence ventilating at 75°, and increase with the sun's advance, keeping through the day at 80° to 90°, closing at 3 to 4 P.M., then sprinkle the foliage, and after being closed for an hour or two admit a little air at the back of the lights to allow of the pent-up moisture escaping. Water will be required about twice a week, and weak tepid liquid manure may be given occasionally, keeping it from the foliage and fruit. Attend to the plants once a week, stopping the growths about one or two joints beyond the fruit, removing bad leaves and exhausted growths. If the plants show signs of exhaustion top-dress with lumpy loam, and layer some of the younger shoots at a joint from which roots will be freely admitted and strengthen the succeeding growths, so that the plants will continue to produce clean fruit for a long period.

Vines.—*Little Grapes.*—These must be thinned immediately they are large enough, the berries swelling so rapidly at this season that they soon become too large to be thinned properly and expeditiously; besides, when the work is deferred too long the size of the fruit is impaired. The laterals must not be allowed to extend so as to interfere with the principal foliage. The growth may be permitted to extend where there is space to admit of its full exposure to light, but not otherwise, as overcrowding and overcropping are often the causes of failure, and more frequently so than any other error of culture. Remove all superfluous, badly placed, deformed, or small bunches. Crop lightly, which means size, quality, and high finish; bulk signifies small fruit, bad colour, poor quality, often shanking, and always non-keeping. Water thoroughly when necessary, one good watering is worth many dribbles. Afford top-dressings of artificial manures occasionally, and a light mulch of sweet lumpy manure will prove beneficial in most cases by encouraging surface roots and maintaining the moisture uniformly.

Vines Cleared of their Crops.—Syringe the Vines occasionally to keep the foliage clean, afford water to render the soil moist, supply an occasional top-dressing of chemical fertiliser of a phosphatic and potassic rather than a nitrogenous nature, and a light mulching to keep the surface from cracking as well as to prevent the roots going down in search of moisture. Allow a moderate extension of the laterals, but do not permit them to interfere with the principal leaves. Some lateral extension is absolutely necessary to prevent the starting of the main buds and the premature ripening of the foliage. There is no fear of the wood not ripening, the difficulty is in the opposite direction—loss of foliage and starting into growth instead of going to rest in late summer. Ventilate freely when the temperature rises above 60°.

Houses of Ripe Grapes.—Black Grapes will be better for slight shade from powerful sun; some pitchard, or a double thickness of herring nets drawn over the roof-lights, will mostly be sufficient shade, and a good spread of foliage will not injure the berries, but assist Hamburgs keeping colour. Moderate air moisture does not injure the Grapes if accompanied by free ventilation. Keep laterals fairly under, but a little extension will assist in the retention of the principal leaves, and upon their continuance in health depends the maturity of the buds for next year's crop. Muscats and all amber-coloured Grapes improve in colour after being apparently ripe, and bear exposure to light without detriment up to a certain point, that of the rich golden amber stage, but after that they become darker and blotchy; then the skin is very susceptible of moisture and easily spotted, which must be guarded against by free ventilation.

Grapes Ripening.—Afford these a free circulation of air on all favourable occasions, with enough constantly to insure a change of air, as it is a confined stagnant atmosphere that does all the mischief in Grapes "spotting" and cracking. Keep sufficient heat in the pipes to maintain a night temperature of 65°, and 70° to 75° by day, with 80° or 90° through the day from sun heat. Avoid a very dry atmosphere, damping

occasionally, and do not allow the border to become dry. Moderate lateral growth will favour Hamburgs and Madresfield Court, but Muscat of Alexandria colours best when exposed to the light, yet a little lateral growth is desirable as a safeguard against shanking, and for the maintenance of healthy root action.

Grapes Scalding.—Muscat of Alexandria and Lady Downe's are more liable to "scald" than most other varieties, but Hamburgs sometimes suffer severely when completing the stoning process. At that time air should be given abundantly, sufficient warmth being kept in the hot-water pipes to maintain a night temperature of 65° to 70°, and 5° to 10° more artificially in the daytime, leaving a little ventilation on at night, and increase it before the sun acts powerfully upon the house in the morning. This attended to, there will be little, if any, scalding, for it is keeping close, moist, and cold that renders Grapes liable to scald if the weather prove bright.

THE BEE-KEEPER.

WORKING FOR A SURPLUS.

ALL is now activity in the apiary. The hot weather experienced during the past week has had the desired effect on the bees. Stocks that were weak a month ago are now ready for supering, and no time should be lost in providing them with surplus chambers, so that full advantage may be taken of the honey flow which may now be obtained from the numerous flowers in bloom.

The majority of bee-keepers have doubtless already decided in what form they desire to obtain a surplus. If from run honey, then we have no hesitation in recommending, which for want of a better name is termed the doubling system. If comb honey is preferred then 1 lb. sections or shallow frames may be depended on, the former for preference. It is advisable to have supers in various forms. The bulk of honey in the comb, however, should be in sections.

How to obtain the greatest weight of honey from a given number of stocks, and also a small increase in the colonies in the apiary, is the aim of the majority of bee-keepers.

We will endeavour to show how this may be done. Instead of allowing the bees to swarm to obtain an increase, super the strongest stocks, and if they are not overflowing with bees, take some frames of hatching brood from another hive reserved for queen rearing, and give it to the colony intended for honey production. A few notes on work done in our own apiary during the past few days may be beneficial to others similarly situated.

WORK DONE IN THE APIARY.

Only a few stocks are utilised for the production of comb honey. For this purpose we use our largest hives, some of which were formerly treated on the two-queens system, some of them having upwards of eighteen frames. With close attention on the lines advocated in previous notes, we succeeded in filling the majority of them with brood. As such a large brood nest would be a disadvantage if a large surplus from supers were required, we reduced the number of frames to ten. In smaller hives, where the brood nest had been smaller, they were reduced in some instances to eight frames.

The dividing board being placed close to the frames, the open space at the back was filled with spare coverings taken from the tops of the frames. This will prevent the bees from filling it with comb, which they doubtless would, instead of working in sections. A crate of twenty-one sections was at once placed on the top of the frames, with the result that the bees took possession at once. Owing to the brood chamber being restricted a surplus is now being stored. As soon as the more forward sections are partly sealed over another crate of sections will be placed underneath, and as some of the colonies are extra strong in worker bees it may be necessary to give a third crate of sections before any of them are fit for removal. Strong colonies of this description when worked for comb honey require plenty of space in the supers, otherwise there is a liability of them swarming.

The frames of brood that were removed from the above hives were placed in supers on other stocks for extracting purposes, the hives being otherwise strengthened by the addition of brood and bees from other colonies intended for queen rearing, these being placed in the middle of the super and some frames of clean old combs put on the outside, as they are not as liable to break down in the extractor as new combs. Excluder zinc should always be used under frames intended for extracting purposes.—AN ENGLISH BEE-KEEPER.

"FAMILIAR WILD FLOWERS."—Nos. 10 and 11 contain plates of the Wild Strawberry, Furze, common Vetch, Sea Campion, Broad-leaved Plantain, the Green Helibore, Heath or Ling, the Burdock, O.-eye Daisy, Great Mullein, Buxbaum's Speedwell, Flowering Rush, pink Campion, Dog Rose, Spindle Tree, Spotted Orchis, Holly, Privet, Sallow, and clustered Bell Flower.



.. All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Vines in Pots (Novice).—Stop those for fruiting next season when from 6 to 8 feet long, and pinch the laterals and sub-laterals to one joint as produced. Obtain as much stored-up matter in the Vines as possible by judicious feeding and cleanly foliage, thoroughly exposed to light and air. Vines intended for planting should be kept in comparatively small pots, and in that case they will not make a large amount of lateral growth, which need not be closely pinched, but it is better to stop at first joint, and afterwards not allow the sub-laterals to interfere with the principal foliage.

Pears Filled with Maggots (Anxious).—The Pears are infested by the larvæ of the Pear-gall gnat, *Diplosis pyrivora* or *nigra*. It was described and figured in the *Journal of Horticulture*, June 3rd, 1897, page 487, and preventives and remedies propounded. It is one of the worst diseases to which the Pear is liable, and the pest causing it appears greatly on the increase in some localities. The best things we have used against it: 1, Destroying, by burning, all galled fruit as soon as noticed. This is easily done with bush, pyramid, espalier, and wall trees, but almost impracticable as regards standard trees. We traced the infection of some wall trees to that of the orchard some distance away, and seldom giving anything but blossom, galled fruit, and leaves. Seeing the American recommendation to sow kaint at the middle of June, 7 lbs. per rod, the hint was taken and the practice answered well. As some of the maggots were considered to have dropped out of the galled fruit before this was cleared off the garden trees, the ground about them, quite a yard from the spread of the heads, was similarly treated. We also caught many midges on pieces of tin smeared with a sticky substance and placed in the forks of the branches just before the blossoms unfolded. The gnats also hate smell—that of petroleum or tar water—using before the flowers open. The petroleum should be emulsified, or one part of petroleum emulsion used to seventy parts water, or tar one part to 1000 parts of water, spraying on very lightly.

Doctors Differing (Puzzled).—You need not trouble yourself about "scientific specialists" apparently differing. In the case you mention the difference was one of terms, not of substance. "Ardent young scientists," as an old scientific celebrity not long ago observed, "are always discovering something, especially new names, and there is no keeping pace with them." We may mention another case of difference—one of substance this time. A while ago some minute eggs were sent to us that had been found in the decayed portion of a fruit tree. After examination, the reply was given to the effect, "Not known, possibly the eggs of some small spider." Some of the same eggs were sent to a specialist, who replied they could not, because isolated, be the eggs of a spider. Thereupon some were forwarded to another authority to "settle the difference." The reply was, "eggs of woodlice undoubtedly;" but before this reply arrived the sender of the "specimens" had been quietly engaged in working out the problem for himself, and had obtained a fine brood of young spiders! In cases of doubt it is well to be cautious, but, unfortunately, there are rather too many people in the world so clever that admitting a lack of knowledge would seem to be an operation about as painful to them as the extraction of one of their wisdom teeth. In cases of abstruse questions or of grave doubt, a man is as likely, or more likely, to gain, rather than lose, status, by permitting himself to say—after the manner of the most really eminent—"I don't know."

Fig Leaves and Fruit Rusted (A. B.).—The rust or disease is caused by a minute insect-like creature, *Tarsonymus fici*, which lives to some extent in the cuticular tissues, and by its action there and biting outside gives rise to the rust. It also attacks the fruit, spoiling it, and seriously affects the young wood. Happily it is not of common occurrence, but sometimes proves disastrous, chiefly under glass, and is not infrequently accompanied, or rather followed, by bacteria, which give the leaves a clammy feel. The best means of eradication is frequent syringing with tobacco juice, diluted about twelve times with soft water or nicotine essence, one part in ninety-six parts water, spraying on with an atomiser or pneumatic sprayer, coating with the finest possible film all over, but especially the under side of the leaves. Frequent fumigation with tobacco paper or vaporisation with nicotine also destroy the pest, but we prefer the liquids.

Weevils on Ferns (W. W. W.).—The specimen sent represents the clay or copper-coloured weevil (*Otiorhynchus picipes*). This pest is very injurious to vegetation, feeds at night on a great variety of plants and trees, which should be taken advantage of to capture the pests. Spread, therefore, a white cloth or newspaper on the stage or floor, stand the pot on it, and place some paper on the surface of the pot nearly, but not quite close, to the crown. This should be done in the afternoon, and after dark at night enter the house carefully with a lantern darkened (a bull's-eye one being best with the light turned off); then shake the plant sharply, brushing the fronds with the hand, after which immediately turn on the light and kill all the pests, which will have fallen on the cloth or paper, scrutinising the base of the plant closely where the soil has not been covered. This is the best remedy, repeating until the weevils are annihilated.

Tuberose Flowers not Developing (Anxious).—The tuber is quite sound, also the roots, of which there is no scarcity; stem and leaves are also clean, except for a little "spider." The raceme of flower buds is also strong, but the flowers as they open die off instead of developing. The petals turn brown and wither, and from them appear the outgrowths of the Lily disease fungus in the conidial or *Botrytis* condition. The cause of its appearance we have no means of determining, but it may have been induced by damp. We have found that a little more air—some constantly—had a good effect on the flowers opening, water not being very liberally given, and the feeding, if any, of a phosphatic nature. We have had a similar evil without any accompanying parasite, and attributed the defect to the tubers or bulbs being lifted too early, or taken up and shipped from their American or African quarters before the growth was sufficiently matured and the flowers properly formed in embryo. This we consider the most likely cause of the disaster now appearing, there not being anything apparently defective in the management—indeed the plant, barring the flowers, is as healthy as we have ever seen a Tuberose.

Epacris Culture (G. H. F.).—An excellent compost consists of good fibrous peat with sharp sand to keep it open. Efficient drainage, proper watering, and firm potting are also necessary. When once plants which are firmly potted in peat become dry ordinary waterings are not sufficient to moisten the soil thoroughly. They must be watered again and again until the water pours from the hole in the bottom of the pot. Indeed, if the dryness is allowed to go too far there is nothing for it but steeping the pot in the cistern until the air balls, which are displaced by the water, cease bubbling up. After the ball is thoroughly soaked no more water should be applied until necessary, when an ample supply should be given. This is one of the secrets in successful Epacris growing. Another, as we have said, is firm potting. Another consists in growing them in an airy greenhouse, where as little fire heat as possible is used, and where a constant circulation of air is maintained on all favourable occasions. After the flowers have faded the growth should be pruned. Erect kinds must be cut back close to the old wood, and drooping forms scarcely so far back. After they are cut back they should be kept rather close until they begin to grow again, when, if necessary, they must be placed into larger pots. After they have fairly recovered from cutting back and potting they should be plunged in ashes out of doors for the summer. By the end of September they ought again to be housed.

Exhibiting Trebbiano Grapes—Qualifications (Trebbiano).—We have seen bunches of this Grape successfully exhibited later in the season "against other white varieties, excluding Muscats." We have also more than once seen first-class samples of it defeat comparatively inferior Muscats. Most good judges of Grapes take into account the cultural merit displayed in exhibits, according to the respective varieties, and do not, so to say, fall down and worship second and third-rate Muscats. In the R.H.S. rules for judging Grapes it is stated that "the bunches should be of uniform size, of perfect shape, properly thinned, so that every berry has had room to develop, the bunch when cut remaining compact. Large bunches, with berries varying in size, are less meritorious than smaller bunches with berries of uniform size. The berries should be large for the variety, and carry a dense bloom. Loose bunches, ill-coloured berries, rubbing, shanking, spot, insect marks and mildew, are all grave defects." Read also very carefully the conditions attached to every class in the schedules of the shows at which you think of exhibiting, and act in accordance with the stipulations. In the great class at Shrewsbury, for instance, you will find that "neither size of bunch, as such, nor flavour, is to carry primary weight, but superior cultivation and finish for the respective varieties, as large bunches may have inferior berries, and the flavour of all varieties cannot be fully developed at the time of the show." We cannot make the matter clearer than by citing the above two sets of conditions, and there is no conflict between them.

Azaleas after Flowering (Tyro).—It is essential to the future well-being of the plants that you keep them under glass, affording a moist and somewhat warm atmosphere, so as to encourage them to make a good growth. When that is complete, and the points of the shoots are thickening a little, they may be placed outdoors in a sheltered situation on a thick bed of ashes, either naturally or artificially shaded for a few days, or the sun may prejudicially affect the foliage. The plants are generally sufficiently grown and the wood ripened as to admit of being placed outdoors by the middle of July. It is entirely a matter for judgment from the condition of the plants. They must be housed before the last week in September.

Dividing Asparagus (Finchley).—It is by no means good practice to lift and divide thick clumps, as the plants or divisions do not grow at all well, the check being too great; hence the best plan is to fill up the gaps by planting one or two-year-old plants from seed in the spring, preferably when they are starting into growth, or early in April, setting carefully, and without injuring the roots or crowns of the old plants. Some growers make the gaps in old beds good by sowing seed early in April, inserting the seed in holes about an inch deep, and two seeds in a hole, the holes being 15 to 18 inches apart, and so made where the bare places are to fill them evenly, covering the seeds with fine soil. The young plants from the seeds will gain strength from year to year, and produce heads in the third year fit for cutting.

Mildew on Vines (Copley).—The bunches and leaves are seriously infested with mildew, and unless you arrest the spread of the fungus at once the crop will be spoiled. See reply to "J. D." on page 481 last week. But in consequence of the extremely thin leaves we do not advise the heating and sulphuring of the pipes as there recommended. Your safest plan will be to dust the bunches, covering every infested berry with flowers of sulphur, through muslin, or some other way you may devise, and let it remain on them for three or four days or more: you may dust the leaves also, especially on the under side; or they may be sponged with a mixture of sulphide of potassium at a strength not exceeding $\frac{1}{2}$ oz. to 2 gallons of water, in which 2 ozs. of soft soap have been dissolved. If all the leaves are like those sent the Vines are in a weak and unsatisfactory state. You say nothing about the border, so we cannot advise on that: but observing signs of scorching we suspect the house has not been judiciously ventilated. It has probably been left closed too long in the morning. It should never be entirely closed at night, and further ventilation ought to be resorted to in advance of the rising temperature. Avoid late syringings or damping. Maintain a genial night temperature, not less than 60°, and a buoyant atmosphere. Do not overcrop. The bunch sent is insufficiently thinned. Unless you proceed with promptitude and judgment you may have a general collapse. We hope, however, the majority of the leaves are better than those sent.

Thistles and Nettles in Meadow (C. C.).—1. Drain the land if necessary. Many fields infested with Thistles have a wet subsoil. 2. Draw every Thistle in the early summer months—April or May—or as late as can be done without trampling down the herbage and spoiling it for cutting, using a pair of "reps," a toothed pincer-like implement with 3-foot handles, common enough formerly, but now seldom seen; or cut off the Thistles below ground with a spud, which at the same time delivers a little salt or kainit on the rootstock. This attended to, there will be a greatly lessened number of Thistles in the hay crop. 3. In autumn or rather late summer repeat the spring treatment with the Thistles in the aftermath or "fog." When in pasture, cut the Thistles in summer, July or August, always when or before "nopping" for flowering. Better use the "reps" or spud persistently from spring to autumn, never allowing the Thistles to make much growth. This practice is that we have found most successful, but permanent riddance seems out of the question, as so many seeds are broadcasted every year over cultivated land from waste places, and even from so-called farmed lands. For lawns the weeders that drop a little weed-killer on the cut-off root of coarse weeds answer well, but we have not tried the process on Thistles in meadows. As regards the Nettles, there is no better plan than to uproot them bodily with a drag hoe, a strong iron implement made by blacksmiths, which tears up the rootstocks and the creeping roots, every part of which should be removed and cleared off the meadow. Spring time is the best to operate against the Nettles.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. D. B.).—*Cyrtanthus Maekeni*; see *Journal of Horticulture*, April 7th, 1898, page 309. (W. N.).—1, *Aquilegia glandulosa*; 2, *Saxifraga Wallacei*; 3, *S. granulata flore-pleno*; 4, *Aquilegia cœrulea*. (J. C. C.).—1, *Oncidium macranthum*; 2, *O. lanceanum*; 3, *Odontoglossum crispum*, white variety. (Amateur).—1, *Veronica rupestris*; 2, *Sedum azoideum variegatum*; 3, *Lithospermum prostratum*; 4, *Lychnis dioica* fl. pl.; 5, *Geranium sanguineum*; 6, *Pyrus domestica*, the Service Tree. (H. P.).—1, *Berberis vulgaris*; 2, *Crassula coccinea*; 3, *Carpenteria californica*; 4, *Fremontia californica*.

COVENT GARDEN MARKET.—JUNE 14TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per box ...	1	3 to 2	0	Nectarines, per doz. ...	9 0 to 24 0
Apples, Tasmanian, per case ...	0	0	0	Peaches, per doz. ...	6 0 24 0
Ch. rries, $\frac{1}{2}$ sieve ...	6	0	10 0	Pines, St. Michael's, each	3 0 8 0
Gooseberries, $\frac{1}{2}$ sieve ...	4	0	0 0	Plums, per box ...	1 6 2 0
Grapes, black ...	1	0	3 0	Strawberries, hothouse, lb.	1 6 4 0
Lemons, case ...	14	0	36 0	" outdoor, bskt.	
Melons ...	2	6	4 0	about 4 lbs. ...	6 0 0 0

REMARKS.—Markets good.

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	1	0 to 3	6	Mushrooms, lb.	0 6 to 1 0
Beans, per lb. ...	0	9	0 0	Mustard and Cress, punnet	0 2 0 4
Longpods, $\frac{1}{2}$ bushel	3	0	4 0	Onions, bag, about 1 cwt.	5 6 0 0
Beet, Red, doz. ...	1	0	0 0	Parsley, doz. bunches ...	2 0 6 0
Cabbages, per tally ...	5	0	7 0	Peas, per bushel ...	7 0 0 0
Carrots, bunch ...	0	6	0 0	Potatoes, cwt. ...	2 0 4 0
Cauliflowers, doz. ...	4	0	6 0	new ...	9 0 11 0
Celery, n. w. per bundle ...	1	9	0 0	Shallots, lb. ...	0 3 0 0
Cucumbers ...	0	4	0 0	Spinach, per bushel ...	2 6 0 0
Endive, doz. ...	1	3	1 6	Tomatoes, lb. ...	0 4 0 0
Herbs, bunch ...	0	3	0 0	Turnips, bunch ...	0 3 0 0
Leeks, bunch ...	0	2	0 0	Vegetable Marrows, doz.	6 0 8 0
Lettuce, doz. ...	1	3	0 0		

REMARKS.—Markets fair.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches ...	1	6 to 2	0	Lily of the Valley, 12 sprays	0 4 to 1 0
Arums ...	3	0	4 0	Marguerites, doz. bnchs.	3 0 4 0
Asparagus, Fern, bunch ...	2	0	2 6	Maidenhair Fern, doz.	
Azalea, white, doz. bnchs.	3	0	4 0	bnchs. ...	4 0 6 0
Carnations, 12 blooms ...	1	6	3 0	Mignonette, doz. bunches	4 0 6 0
Daffodils, single yellow, bet. 12 blooms ...	0	6	0 8	Narcissus, doz. bnchs. ...	1 0 2 0
Daffodils, double, bunches	0	4	0 6	Orenids, var., doz. blooms	1 6 9 0
Eucharis, doz. ...	2	0	3 0	Pelargoniums, doz. bnchs.	4 0 6 0
Freesia, doz. bnchs. ...	2	0	3 0	Pæonies, doz. bnchs. ...	4 0 8 0
Gardenias, doz. ...	1	0	2 0	Roses (indoor), doz.	2 0 3 0
Geranium, scarlet, doz. bnchs. ...	4	0	6 0	" Red, doz.	2 0 4 0
Hyacinths, Roman, bunch	0	4	0 6	" Tea, white, doz. ...	2 0 3 0
Iris, per doz. bunches ...	6	0	1 0	" Yellow, doz. (Perles)	2 0 3 0
Lilium Harrisii, 12 blooms	3	0	4 0	" Safrano, doz. ...	2 0 2 6
" longiflorum, 12 blooms	4	0	6 0	Smilax, bunch ...	3 0 4 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Foliage plants, var., each	1 0 to 5 6
Aspidistra, doz. ...	18	0	36 0	Fuchsias, doz. ...	4 0 6 0
Aspidistra, specimen ...	5	0	10 6	Heliotropes, doz. ...	4 0 6 0
Boronia ...	12	0	18 0	Hydrangeas ...	6 0 10 0
Crotons, doz. ...	18	0	24 0	Lilium Harrisii, doz. ...	12 0 18 0
Dracæna, var., doz. ...	12	0	30 0	Lycopodiums, doz. ...	3 0 4 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	6 0 8 0
Erica various, doz. ...	9	0	24 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., each ...	1 0 15 0
Evergreens, var., doz. ...	4	0	18 0	specimens ...	21 0 63 0
Ferns, var., doz. ...	4	0	18 0	Pelargoniums, scarlet, doz.	4 0 6 0
small, 100 ...	4	0	8 0	Solanums, doz. ...	6 0 12 0
Ficus elastica, each ...	1	0	7 0	Stocks ...	4 0 6 0

Bedding out plants in variety from 3s. doz.



RABBIT LAND.

THIS is the name by which shortly will be known a very large tract of England. When men like Lord Walsingham and Mr. Rider Haggard talk seriously of the impossibility of making farming profitable, and that rabbit warrens are the only alternative to barren common, we must come to the conclusion that at any rate some districts are in danger of becoming depopulated.

No doubt the land in question is very light and sandy, and was only taken into cultivation owing to the high price of grain many years ago, but there are numbers of such tracts of country spread about England to which the same description would apply, and the great question is this, "Is it necessary that such or any land should be turned into rabbit warrens?" Well! It is all a matter of money. Sentiment is not considered nowadays, and a profit is the only thing to take into account.

Although we have not farmed rabbits ourselves we have seen it done, and have seen 400 to 500 couples of good rabbits taken from a 10-acre field, the said field being also stocked with cattle and sheep, as occasion required. It was not good land. A few acres might have been classed as medium, but the remainder was poor sand, and the surrounding fields were worse if anything. One has since been let at 5s. per acre and another has gone out of cultivation and was subsequently planted with forest trees.

Now, we have long since come to the conclusion, but it was only forced upon us by bitter experience, that all calculations based upon expected profits from land must be subjected to very heavy discounts, and therefore we must not be too sanguine in reckoning profit on rabbits, but 400 couples at 2s. 3d. come to £45, or 22s. 6d. per acre, which is not to be despised as only a part of the return from land rented at about 10s. per acre.

Where a field is near the farm premises no doubt it is useful as accommodation from the strictly farming point of view, even if it be heavily stocked with rabbits, but if farther away the rabbits and a very scanty flock of sheep must be looked upon as the only rent earners. But why should so much land go back to a more or less primitive condition? The wages question is the answer.

We can remember the time when hands could be found at moderate wages in every village to go to work amongst Potatoes, Carrots, or fruit; to go even further, the farmers who opened up new industries in these directions were looked upon as public benefactors, and so they were. But foreign competition in the produce markets, added to home competition in the labour market, has made it impossible in remote country places to continue to grow such crops at a profit. In many instances the necessary hand labour cannot be obtained at all.

The irony of the thing is fully realised when we are told that it is no use to grow Strawberries except near large towns—not on account of the nearness of the markets, but the abundance of hand labour. So we must suppose that the low-rented farm labourer is better off on a low wage than the high-rented town dweller on a higher wage, or his family would be more ready to earn casual wages.

Look at it from whatever point we will, it seems evident that with a continuance of present prices much land will be transferred from the dominion of the plough to that of the rabbit, which will not be again disturbed until the whole country is one mass of terraces and villas.

The price of grain being so unremunerative, could not such land be cheaply cultivated without corn crops? A good stock of rabbits could be kept without doing very serious damage, but the first difficulty would be almost insurmountable. Horses must be kept, and straw of some kind, as well as hay, must be provided. They might be purchased, but in most cases there would be sufficient better land which would profitably grow corn and provide the necessary fodder, for not many horses would be required if the land were cultivated as we should suggest.

The basis of our ideas is a three or four years temporary pasture to be grazed as long as the returns from sheep and rabbits are sufficiently large to warrant letting the land lie still. The seed mixture to produce such a pasture on bad soil should contain Ribgrass and Kidney Vetch, in addition to White Clover, Perennial Ryegrass, and a little Alsike.

As soon as the pasture becomes mossy and bare, being thus of very small value for sheep, it had better be broken up in autumn and worked about, then ploughed down about 8 or 9 inches before December 1st.

The idea is a crop of Potatoes, but the soil must be well decayed before spring if it is to be of the utmost possible benefit to the crop.

No farmyard manure being available, the Potatoes must be grown without it, but with 4 cwt. of superphosphate and 2 cwt. of sulphate of ammonia per acre put on when the Potatoes are planted, should go a long way as a substitute for the muck. If nightsoil could be obtained at reasonable cost, and the carting were not too heavy, a moderate dressing, say 4 to 5 tons per acre, might pay in the crop and

leave a valuable residue for the future, but it must be applied in autumn before ploughing.

If the land be in a warm district and not very subject to spring frosts, with an aspect to the south or east, second early Potatoes such as Myatt's or Snowdrops, might pay the best, but under other conditions strong growing late sorts, like Up-to-Date or Imperator, would be more suitable. Get the crop up as soon as ready and sell it for early delivery; even the late sorts should have gone before December. After the Potatoes take a Turnip crop, which will not need much preparation after the Potatoes have partially cleaned the land. A moderate dressing of super and bonemeal will be necessary to grow a good crop of roots.

The next course must be Rape sown the end of April broadcast, and with it the seed mixture for re-seeding the temporary pasture. The Rape should be sown at the rate of 7 lbs. per acre, and another dressing of super, say 3 cwt. per acre, will pay either in this or the young seeds to follow. Of course, if the rabbits are not too numerous, or it is thought worth while to use wire, a corn crop may be grown as a cover to the young seeds and the Rape course left out. It is all a matter of calculation as to the probabilities of the grain crop paying for the extra expense. The straw must be estimated at a fair consuming value in deciding this question.

WORK ON THE HOME FARM.

The weather now is simply splendid, and Turnips have been sown in fine order. The land, warmed by the bright sunshine, has made an ideal seed bed, and there should be no question about the crops. We hear of a farmer or two grumbling, and wanting rain. We fear that spring corn has not done too well, has gone away, and lost plant from the ravages of wireworm. No doubt a few genial showers would assist such crops to recuperate, but warmth is the great thing needed—warmth without night frosts.

Rain could not be needed for the Turnips yet, for if the land has been sown quickly after ploughing the moisture must have been ample, and the tilth an ideal one.

Wheats are growing well and looking grand, as might be expected with ample sunshine. One or two fields which looked thin a month ago now appear to be as full as they can hold of green blades.

We are glad to hear and read of the widespread and systematic experiments which are taking place in the spraying of sulphate of copper, with the object of destroying Charlock or Ketlock. We have seen the immense damage done by this noxious weed, and a remedy for it will be a great blessing to farmers. Can a benefactor find an antidote to the common field Poppy? for we believe this to be a greater and more destructive enemy than the other.

It is certainly quite as inimical to crops amongst which it grows, and is more difficult of eradication, whilst the seeds being smaller and more numerous it spreads infinitely faster.

Clover and hay are growing rapidly under the influence of the hot weather. A few showers would do them good and help them to become longer, and therefore heavier in bulk, whilst putting off the haymaking season a little. A postponement we can well do with, for work is very plentiful. Potatoes are growing fast, and require both horse and hand hoeing, and will soon be ready to earth-up. The sulphate of ammonia top-dressing, 2 cwt. per acre, goes on this week.

THE HAY HARVEST.—During the brilliant weather it is reported that rapid progress has been made with haymaking in Berkshire and Hampshire. In several places the crop was secured and ricks got up in capital condition. The growth is rather thin in some places, but on the whole the reports in these counties are satisfactory.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899.	June.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches.
Sunday	4	30.224	63.8	59.7	N. E.	60.0	81.4	51.8	111.7	46.2	—
Monday	5	30.264	72.9	59.8	S. W.	60.2	87.1	52.6	130.9	48.1	—
Tuesday	6	30.286	72.8	63.7	N. E.	62.4	83.9	56.1	115.8	50.9	—
Wednesday	7	30.312	69.7	60.1	E.	62.3	78.7	53.8	116.9	49.6	—
Thursday	8	30.437	55.7	49.1	N. E.	62.8	69.2	49.3	117.6	47.1	—
Friday	9	30.412	55.4	48.1	N. E.	62.0	69.6	48.9	121.3	47.1	—
Saturday	10	30.336	56.2	50.0	N. E.	61.9	72.7	50.2	120.2	47.3	—
		30.325	64.5	55.8		61.7	77.5	51.8	119.2	48.0	—

4th.—Generally sunny, but close and hazy, and thin cloud at times.

5th.—Hot and sunny, but hazy in morning.

6th.—Bright and sunny throughout.

7th.—Fine and sunny, but fresher; some cloud at times.

8th.—Cool breeze, cloudy at times, but much bright sun.

9th.—Cool breeze and much cloud, but frequent bright sun.

10th.—Cloudy early; generally sunny after 9.30 A.M.

A fine summer week, the mean maximum higher than the average for any week in the year. A second rainless week.—G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, JUNE 22, 1899.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

DRY BUT IMPORTANT.

MAKING a mass of figures interesting to the majority of readers, and especially those who enjoy light literature, is a task which few persons can successfully accomplish. No attempt will now be made in the direction indicated, and, therefore, notice is hereby given to the light reading fraternity to skip this page, as the matter is intended for the thoughtful who desire to see the soil of their native land turned to the best possible account in the production of health-giving and wholesome food by enterprising and intelligent cultivation.

We have been glancing through the "Agricultural Returns for Great Britain"—a stupendous array of figures truly, though of unquestionable importance, and a few citations from them will not be unacceptable to the large community of readers who are interested in the demand for and the supply of hardy fruit. That the demand, great as it is, will increase is certain, and the better the supply forthcoming the greater such demand will be.

Another certainty may also be mentioned in this reference—namely, no matter to what extent the demand may grow it will be met by the cultural resources and commercial aptitude of other countries, just in so far as the shortages in our home grown supplies afford opportunities to our trans-oceanic competitors to fill the vacuum that these shortages may create. That, we think, is a concrete economic fact, and it is well to look it fully in the face and accept, as we must, all resulting possibilities.

Turning to the official records, we find it stated that the importation of Apples into the United Kingdom from foreign countries and British Colonial possessions during 1898 amounted to 3,458,646 bushels. This is the smallest bulk with one exception since 1891—namely, in 1895, when the importations were 166,384 bushels fewer.

In 1897 the arrival of Apples from abroad amounted to 4,199,921 bushels, and in 1896 to 6,176,956 bushels, or an excess of no less than

*Eyre and Spottiswoode, East Harding Street, London.

No. 2647.—VOL. C., OLD SERIES.

2,718,340 bushels over the imports of the past year. The (1898) figures are, however, probably incomplete, for it is stated in an explanatory note, "they were taken from the accounts relating to trade and navigation, and are therefore subject to revision."

Taking the returns for 1897 as accurate it may be interesting to note whence the produce came. From foreign countries it amounts to 2,991,215 bushels; from British possessions 1,208,756 bushels; total, 4,199,971 bushels of Apples to eke out our inadequate supply.

Of the foreign Apples the United States of America sent more than half the bulk—1,808,115 bushels, the other chief contributors being Holland, 386,677; and Belgium, 382,914 bushels respectively. France sent us 172,981, and Portugal 145,934 bushels each. Then follow Spain with 58,824, and Germany with 26,958 bushels. Much smaller consignments came from Italy, Madeira, Norway, Sweden, Denmark, the Azores, and the Canary Islands, these amounting in the aggregate to 8600 bushels of our staple fruit.

From British possessions Canada sent us nearly six times as many Apples as all other colonies put together. Tasmania contributed 135,495 bushels, the remaining parts of Australasia 30,723 bushels, made up of 20,500 from Victoria, 10,050 from South Australia, and 173 bushels from New South Wales. The Channel Islands sent 21,603 bushels, while the Cape of Good Hope is only credited with helping us to the extent of 6 bushels of Apples.

Passing to other kinds of hardy fruits enumerated—namely, Cherries, Pears, and Plums—we find considerable importations; or in 1897—the last completed figures—Cherries 312,294 bushels, Pears 1,051,817 bushels, and Plums 1,043,819 bushels.

No British possessions are credited with sending us Cherries. France, with 192,686 bushels, contributed more than all other countries combined. We received from Germany 57,214, Holland 40,403, and Belgium 21,546 bushels respectively, while Spain sent 413, and Norway only 32 bushels.

Among foreign exporters of Pears to this country Belgium heads the list with 529,095, France following with 269,142 bushels. Holland comes next with 134,468, while the United States sent 86,862 bushels. The consignments from Germany are 22,994 bushels, Denmark, Portugal, Spain, Italy, and Morocco contributed in a small way, making the total bulk of Pears from other than our colonies and islands 1,043,989 bushels. We received 4751 bushels from the Channel Islands, 2654 from Canada, and 247 bushels from the Cape, while 212 came from Australasia and 24 from Malta, making the total Pear imports, as above stated, 1,051,817 bushels of fruit.

We are indebted to other lands for nearly the same huge bulk of Plums, all but 828 bushels (449 from Canada, 367 from the Cape, 9 from the Channel Islands, and 3 from Australasia) coming from foreign countries. France is the chief exporter, with 509,934 bushels, Germany following with 286,905, Holland sent 149,503, and Belgium 89,900 bushels. The United States contributed 5352 bushels. Denmark, Sweden, Portugal, and Norway helped, but only to a slight extent, in making the total Plum imports 1,043,819 bushels.

Of the hardy fruits named, Apples, Cherries, Pears, and Plums, we have to recognise the significant fact that our shortage—the inadequacy of our home grown supplies for meeting the requirements of our population—was no less than 6,617,951 bushels for the last year (1897), for which authoritative returns are presented by the Board of Agriculture. That is something to be pondered over by owners of land, which is capable, under intelligent methods of cultivation and appropriation to the respective kinds, of growing produce of the highest quality for our markets.

The hard unyielding figures cited afford the most powerful confirmation of the dismal allegations of those so-called growers of hardy fruits, who bungle and fail, that planting is being overdone; on the contrary, it is only by systematic planting and sound management that fruit can be grown in the bulk and quality requisite for meeting the ever increasing consumptive demand. It cannot be afforded by enfeebled and service exhausted trees, but only by the young, fruitful, and well constituted, and these in the best varieties of the respective

kinds. Nor can it be grown by everyone and everywhere. The policy of snatching at the cheapest of trees, regardless of varieties, sticking them anyhow in any vacant land, and leaving them to take their chance, has gone on too long. It can only end in disappointment, except to skilful cultivators at home and abroad, who have, because of the failure of others, the better opportunity for disposing of their own superior wares.

It would be easy to collate more startling figures than those we have taken from the Government returns, such as the importations of other kinds of fruits—Oranges, Lemons, naturally grown Grapes, and other tropical kinds, including Nuts, bringing up the total importations to nearly 20,000,000 bushels; but it would be misleading as affecting British cultivators, and that is no part of the policy of the *Journal of Horticulture*.

It may be incidentally mentioned that nearly 1,000,000 "bushels" (what a term to employ!) of Grapes were imported last year, the overwhelming amount, however, being naturally grown in Spain and Portugal; but upwards of 40,000 bushels came from the Channel Islands, and 21,000 bushels from Belgium—presumably grown under glass. British growers can, all the same, be left to look after themselves in this reference.

Reverting to the subject of hardy fruit, we seem to be making some progress, as an increase of over 1900 acres of orchards, cultivated and under grass, is recorded for the year, though the area under bush fruits appears stationary.

Another point may be touched on. We appear to have imported nearly 7,000,000 cwts. of Potatoes during the past year, valued at nearly £2,000,000; also over 6,000,000 bushels (why not cwts.?) of Onions, value almost £800,000, an increase on all previous years, notwithstanding this era of "onionism"—i.e., gigantic home-grown bulbs.

On the general question of the inability of the nation to feed its population we note some astounding figures. The total vegetable products imported into the United Kingdom during the past twenty years amounts in value to £84,281,440, and the total agricultural food products to the tremendous sum of £155,807,377! On contemplating such figures, based on facts, two questions of fundamental importance force themselves to the front.

1, What would be the condition of our dense population in the event of this country being driven into a prolonged general war?

2, Is all being done that it is possible to do in various ways for developing the food-producing resources of our sea-girt isles?

Dry as this brief narrative of our food dependencies on other lands may be, we are disposed to think he will be a bold man who questions the importance of the subject.

NOTES ON SOME INJURIOUS INSECTS OF 1898.

THE season of 1898 was on the whole not what the majority of gardeners would consider a favourable one; it was marked by great dryness in most districts, with transient showers, sometimes violent, and the coldness of the early summer was followed by heat that was often scorching. Within my observation it was not a year when insects generally were numerous. I should say our foes in gardens, orchards, and shrubberies did less mischief than is usual, the weather being frequently unfavourable to their emergence or increase. Cold winds killed multitudes of young caterpillars; very dry weather proved a check to the appearance of many moths, also the foliage became tough on some trees and shrubs, so that beetles or larvæ could not obtain nutriment. Many flowers died off rapidly before the insects that fed on them were full-grown. Even those species that feed on the roots or crowns of plants suffered in a degree from the high temperature and deficient rainfall. This present spring, too, being cold and not very moist has thus far not helped our insect enemies.

Miss Ormerod, whose labours have, with the assistance of her many correspondents, helped to spread the knowledge of entomology amongst farmers and gardeners, in her twenty-second annual report states that though few hurtful insects were remarkably abundant, yet there were some singular variations in the kind and extent of insect infestations. Ground beetles of several species were plentiful and active, specially those attacking Strawberries. For some years it had

been reported that Potato haulm was seriously injured in various localities by the tunnelling of a caterpillar, and one species at least was identified last year. Aphis of many kinds, the too well-known "blight," was abundant; this group of insects can stand cold winds and summer drought. Towards autumn very numerous complaints were made by gardeners and Cabbage growers of the mischief traceable to caterpillars of the white butterflies, which occurred in ravenous multitudes. But on the other hand the cornfields suffered little from the tiny enemies of stem and grain. Surface caterpillars were about indeed, yet did no great harm; and the host of leaf-devourers, often complained of during May, were conspicuous by their scarcity.

Coming more to detail, we will begin with the Strawberries, which are just now arriving in the markets—a fruit so much valued by us that our ire is roused against insects that audaciously take it from our mouths, so to speak. It is certain the beetles complained of have in some neighbourhoods seriously reduced the crop. Miss Ormerod states that these eaters of our Strawberries were first reported to her in 1894, but I believe ten years before that they were mentioned in these pages, one species in particular getting from some gardeners the name of "Black Bob." Very dingy indeed most of these beetles are, if not all of them black; the chief offender, *Pterostichus vulgaris*, is wholly black and glossy, with a striated back and no wings. That fact, of course, prevents such beetles from travelling across the country. Two other species observed on the Strawberry are wingless also, or have them undeveloped usually. The second in importance, however, *Harpalus ruficornis*, possesses wings, and the insects have been seen at night flying in parties, after the manner of cockchafers; this species is of a reddish brown. What surprised the entomologists was, that all these beetles belong to a family believed to be thoroughly carnivorous or predatory in habit; certainly the larvæ or grubs are, which is something by way of a set-off. The beetles themselves have a liking for meat as well as Strawberries; this suggests a mode of trapping them.

During daylight they hide, after sunset they may be searched for with a lantern, but this is tedious work. Laxton Brothers, of Bedford, state it is more satisfactory to bait a number of pudding basins with pieces of lights and sugar water. These are sunk into the ground level to the surface at night, and examined next morning. By another gardener it is reported that thousands were caught in rows of condensed milk tins placed along the beds, with half an inch of tar at the bottom. Two instances are recorded last year of Strawberries being damaged by the cockchafer grub. On the Continent this insect is frequently detected lying at the roots of these plants, seldom here. On our island it is too well known as a foe of Turnips and other root crops, also infesting grasses, and attacking young trees in nurseries.

"Black Bob" has a near relative, *Pterostichus madidus*, which has, for thirteen years, been noticed as a cause of injury to Mangold roots, attacking them at night during June. From the time the attacks are made they are overlooked, the beetles hiding by day. An observer last summer noted that the choicest varieties, and most valuable for feeding purposes, are singled, the plants being cut off just above the roots, the leaves are seldom touched. Evidently remedial measures must include the destruction of the grub or maggot which has produced the beetle, if that can be secured; at present the habits of the species are scarcely known. A much smaller beetle was noticed again in May and June, 1898, injuring the crops by gnawing little holes in the germinating plants, so that they die before appearing above ground, or later, biting the tap root and leafstalks. This is *Atomaria linearis*, only half a line long, blackish or brown, possessing wings, and is busy in the day occasionally, as well as at dusk. Where the species has been noticed it appears by myriads, but it has never been generally distributed, though Curtis mentioned it many years ago in his "Farm Insects."

Last year's report brings out some facts important to all the possessors of orchards, though, as a rule, shortness of crop was seldom traceable to insect foes, but arose often from other circumstances. But the Pear gnat midge was more abundant and injurious than in any year since 1883, occurring, however, chiefly about South England. This insect (*Diplosis pyrivora*) is a tiny two-winged fly; it has black head and thorax touched with grey, the body brown tipped with whitish hairs, and the dusky wings have a fringe of hair, there is an ovipositor in the female. During spring, they deposit eggs on the blossom, sometimes before it is opened; the grubs hatch speedily, when removed from the fruit they have the power of jumping. One remarks, "The Pears swell up to the size of a sparrow's egg, and, if you cut them open just below the eye, you find about a dozen of these small maggots. In a week or fortnight the Pear becomes black where they have eaten the inside away, then they disappear; usually the Pear falls to the ground, but some remain as deformed fruit on the tree." Of course, all fallen Pears should be burnt, and it is recommended to shake trees

that are attacked, to get away every Pear that is infected with maggots. Since the cocoons are formed on the earth under the trees, skimming off the surface soil in the autumn has been recommended. But Prof. Smith of New Jersey reports that the best remedy is a good top-dressing of kainit; an almost equal result, however, was attained by free sprinkling of nitrate of soda.

There is an Apple-haunting insect, which probably does every year a certain amount of mischief, that escapes notice; but last year several complaints were made from different localities. Henceforth gardeners must keep watch for it. The maggot has the habit of destroying hunches of Apple blossom by tunnelling up the shoot beneath them. The moth is called the pith moth, *Laverna atra*; it is minute in size, deep brown streaked with white, and flies in July, when the eggs are laid. Evidently the young caterpillars hibernate under the bark of an Apple twig, then in May bore along the wood of a growing shoot, devouring the pith. They pursue a different plan to that followed by the red bud caterpillar, which infests the Apple in May, and first feeds on the blossoms, spinning them together, then finishes off upon the leaves. This insect, common on the Continent, is seldom noticed in Britain. Little can be done with either, except to pick off any shoots seen to be affected at the tips. The conspicuous caterpillar of the buff-tip moth has been taken upon Apples in several places, both North and South of England.—ENTOMOLOGIST.

FLOWERS IN DRY WEATHER.

A WELL-KNOWN book—which I must confess I have never read—bears the taking title of "How to be Happy, though Married." Gardening has so many difficulties that one would think a volume entitled "How to be Happy, though a Gardener," would run through many editions. I am not going to discourse to my readers in the familiar style of the "Chaplain to the Forces," whose wise words (I speak from *parole* knowledge only) have, it is to be hoped, brought peace to some unhappy households; but I desire, at a time when drought prevails, to see what nectar and comfort one can extract from the flowers of the time. If things wilt and look forlorn for want of the refreshing rain there is no reason why we gardeners should seek coolness and oblivion in that slough of despond which seems so convenient. While we are at the use of means to keep our favourites alive, we may, at the same time, think happily of the beauties of many things. Toil there may be, and is; but the brilliancy of the sun brings with it much of charm and many bright features.

The time has gone by for the Poppy to be looked upon with dread or despised, as in the Elizabethan days. We may not, like the ancients, dedicate it to Ceres; but we look upon it as one of Flora's gifts, carrying to us, in its brightness and gaiety, joy and lasting pleasure, though its flowers in themselves are only fleeting. In these dry days, in which the Poppy appears to delight, the great blooms of the Eastern Poppy (*Papaver orientale*) glow in the strong sunlight. If we use this Poppy wisely we need not call it garish and gaudy. Smaller and different in every way are the flowers of *Papaver rupifragum*; more delicate and fleeting in their beauty, their soft salmon colouring is less obtrusive, even when they seem to reflect from their shining crinkled petals the sunlight's rays.

As one grows it longer, one learns better to appreciate Mr. J. Carrington-Ley's hybrid between *P. orientale* and *P. rupifragum*. Like a small Oriental Poppy in its general features, there is about it an almost undiscernible, subtle, pleasing reminiscence of its other parent, which gives refinement to its blooms. Cheering also are the flowers of the other Poppies, such as those of the dainty, delicate, little *P. alpinum*; the more robust *P. nudicaule*, varied, like the Alpine Poppies, in their colouring; the exquisite Shirley Poppies; or the deep scarlet, jet-black spotted blooms of *P. umbrosum*.

To no flower seems the dry weather more welcome than to the old double white Pink. How soon rain defaces the beauty of its lacinated petals, and changes their grace into decay. We have no sweeter flower than this. One would almost think that the fringing of its petals had been done of set purpose, so that there might be more opportunities for the diffusion of that sweet fragrance which is so welcome as we draw near. Did the long drought but lengthen our enjoyment of this delicious perfume it would not fail to bring some balm of comfort.

From the old white Pink with its odour to the Australasian *Olearia stellulata* seems a long leap. The latter has no fragrance to recommend it, but, like the songless bird, it has its beauties. If it cannot waft to us a perfumed breath it can give us the snowy whiteness of its lowlier companion, and the masses of white Daisy like flowers look cool and refreshing. Like the Pink, dry weather prolongs its beauty, and one can but think with some apprehension of these great sprays of flowers, with which the grey bushes are so covered, being defaced by the needed rainfall. Compared with it,

its congener, *O. ilicifolia*, seems poor and unsatisfying, though it has beauties too.

Seeming to revel in the drought and the sunlight are the *Cistuses* and *Helianthemums*. But for their tenderness the former would be among the most useful of our summer-flowering garden plants. Looking at the beauty of the few which can be trusted to live outdoors for a few years, one is reminded of great bushes in more southern gardens laden with brief-lived flowers, dazzling in their brightness and loveliness. I shall not attempt to deal with the synonymy of the *Cistuses*. The Rev. C. Wolley-Dod can tell of it better than I. It is enough to look upon a bush of the one which passes as *C. corbariensis* with many, but which the Kew Index calls *C. salvifolius*, with nigh upon a hundred open flowers. Of the *Helianthemums* one has so often spoken that they may almost be left alone; yet there are no better dry weather plants. As one gazes upon their bright little flowers they recall a fine rock garden in Surrey, where on the chalk they are more delightful than in my own garden.

How much we are influenced by imagination is realised when one wanders to the little Water Lily pool and studies the floating leaves and swelling buds of the *Nymphæas*. A sensation of coolness comes over us as we look upon the pool with its aquatics and its fringe of surrounding plants which delight in the moisture they can draw at will. Cool does it feel as we look upon the *Iris*es with their fresh leaves and their bright gay flowers. They bring to us the remembrance of Longfellow's poem, which also seems, in some degree, to waft to us a thought of refreshing breezes and cooling waters. We may join in spirit with the departed singer of sweet songs and say—

"O, Flower-de-luce, bloom on, and let the river
Linger to kiss thy feet;
O, flower of song, bloom on, and make for ever
The world more fair and sweet."

—S. ARNOTT.

CHOISYA TERNATA.

I CAN fully bear out all that Mr. Abbey says of this useful shrub on page 465, and as to its relative hardiness, I think I may venture a step farther than your contributor, in that the shelter of a wall having a sunny aspect is not absolutely necessary in the West of England. Here in the pleasure grounds a plant has stood for many years, and had the reputation at one time of being one of the largest seen in such a position. Its dimensions are not now what they were six years since, the two cold winters of such severe and prolonged frosts cutting all the older stems down to the ground. This season it has been finer than I have previously seen it, both in its wealth of blossom, robust health, and compactness in growth, which satisfactory condition is the outcome of the frost, necessitating the removal of all its branches, and the fresh and abundant sucker growth that has since issued. It has been most striking as a landscape object, and useful for filling vases in the house.

Its situation would not strike one as being very suitable, for it is shaded by tall adjacent trees, and occupies a position at the foot of a deep bank furnished with other shrubs. The spot is a delightfully cool one in summer, and still more so in winter, for while the summer sun is filtered by trees and shrubs on the south and west, cold winds from the north, west, and east furnish an extreme that would soon tell its tale unfavourably on anything not possessed of a good constitution. It certainly is a position that would be seldom chosen for the planting of a tender shrub, such as it was treated at the time it was planted here, and the soil being of a clayey nature would seem adverse rather than favourable to its welfare.

Taking all these points into view, I can scarcely define the shrub as a tender one, needing the sheltering influence of a sunny south or west wall. I should not hesitate to plant in less favourable situations, comparatively speaking, than those advised by Mr. Abbey, and considered necessary by planters generally. At the same time I consider that as a wall shrub nothing could give a better display than the *Choisya* when a position suited to its requirements is available.

In a Bristol garden I once saw a very fine and spreading plant growing in the angle of the mansion which, when in flower, pervaded the rooms with its pleasant perfume through the open windows adjoining. This had a favourable spot, and the extent of growth proved that the plant was well suited both in soil and aspect.

Mr. Abbey's advice to plant outdoors may well be repeated, especially to those who have been content to cultivate them in pots, and that, too, without much satisfaction from a floral point of view. Being strong in root growth, small pots cannot long support them, at any rate, not to furnish flowers sufficient to satisfy greenhouse requirements. I should hesitate to plant it in a conservatory unless the structure was of large dimensions, for the fragrance of a big bush would prove too much in a limited space. It is curious that a shrub so long cultivated by British gardeners should not have become more often planted outdoors, but the fact of its being cultivated in pots accounts to some extent no doubt for neglect outdoors.

There is an advantage in planting in sunny and shaded places in that a longer succession of flowers for cutting is furnished, and the additional feature which it produces while in flower in other than the sunny situation, but the one here plainly shows that it is not particular as to soil.—W. S., *Rood Ashton*.



ROSE SHOW FIXTURES IN 1899.

- JUNE 24th (Saturday).—Windsor.
 „ 27th (Tuesday).—Westminster (R.H.S.) and Southampton.
 „ 28th (Wednesday).—Bath, Croydon, Maidstone, Richmond, and Ryde.
 „ 29th (Thursday).—Canterbury and Sutton.
 JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 „ 4th (Tuesday).—Gloucester and Harrow.
 „ 5th (Wednesday).—Brockham, Ealing, Hanley^o, Hitchin, Reigate (Redhill), and Tunbridge Wells.
 „ 6th (Thursday).—Co'chester (N.R.S.) and Farningham.
 „ 7th (Friday).—Hereford.
 „ 8th (Saturday).—Manchester.
 „ 11th (Tuesday).—Reading and Wolverhampton.†
 „ 13th (Thursday).—Bedale, Brentwood, Eltham, Helensburgh, Norwich, and Woodbridge.
 „ 14th (Friday).—Ulverston.
 „ 15th (Saturday).—New Brighton.
 „ 19th (Wednesday).—Cardiff^o, Newcastle-on-Tyne.†
 „ 20th (Thursday).—Salterhebble and Sidcup.
 „ 22nd (Saturday).—Newton Mearns.
 „ 25th (Tuesday).—Tibshelf.
 AUG. 3rd (Thursday).—Liverpool ‡

^o Shows lasting two days. † Shows lasting three days.
 ‡ Show lasting four days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

HON. EDITH GIFFORD.

THIS is one of the most charming of the Tea Roses, its fine flowers being of great substance, white with a blush centre. It is also one of the hardiest and best growers, though, unfortunately, not so free as *Marie Van Houtte*, *Madame Lambard*, and one or two more of the best known kinds. What beautiful flowers these delightful Roses give us at this time of year, buds and fully expanded blooms being equally beautiful, though the latter are not, of course, so useful for cutting. It is a mistake to prune these kinds too hard; but, on the other hand, many growers leave in far too much weakly spray.—H.

ROSES IN POTS UNSATISFACTORY.

"I REPOTTED my Roses early last autumn in (as I now fear) soil unsuitable by being too light. I then left them out in the open, and they were subjected to very heavy rain for some time. This, I fancy, had the effect of washing out the nutriment and clogging the drainage. In spite of liquid and artificial manures I failed to get good results in the spring. Should I repot with better compost now, or leave them alone till the usual and proper time in the autumn? It is in February and March that I should prefer to secure bloom, starting the Roses with Vines about that time."—BRYN.

[We publish the above letter as convenient for giving a reply that may be useful to others as well as "Bryn." As to repotting in the autumn, unless the Roses need it, and the work is done in the right manner, in suitable soil, and this kept suitable, repotting them may easily do more harm than good.

If the pots of the failing Roses were fairly filled with healthy roots, turning the plants out, rectifying the drainage, and protecting it with turf or moss; rubbing off the loose surface soil with any inert particles, returning to the pots, then adding sound and slightly enriched turfy loam, working it down with a stick; then pressing the whole firmly together, and standing the pots on tiles or laths with an inch of space between them for the free escape of water, the plants would have flourished much better than by shifting them into larger pots in too light and insufficiently firmed soil, and taking no special precautions for effective drainage.

However unsuitable the soil used, it was made worse by saturation. Overwatering after repotting is one of the greatest of evils, and the greater the bulk of soil unoccupied with roots the greater the evil must be. If the drainage was "clogged" with soil, either the crocks were not properly protected, or the pots stood on a base which prevented the escape of superfluous moisture. In this case the nutriment would not be washed out, but retained, and the saturated soil by lack of air circulating through it would be soured—poisoned; while the roots, because they could not breathe, would sicken and die.

Giving liquid or artificials under such conditions would make matters worse, as such applications can only do good when there are active healthy roots to imbibe them, while if given too strong such roots as there are must be injured. We suspect our correspondent has

first erred in the method of repotting and arranging the plants, then in overfeeding.

As to repotting such Roses now (June), we can only say if they were ours and unhealthy, still recoverable, we should proceed as follows:—Have suitable and proper moist soil, with clean pots and crocks in various sizes ready; take a plant, turn it out, liberate the roots of loose and also sour looking soil, even if need be to half the bulk, or more; plunge the roots into an empty pot or two, and choose one which holds them comfortably though slightly coiling round or pressing against the sides; crock the pots thorough, and protect the drainage efficiently, then place in and press down the proper quantity of soil for raising the collar of the plant to within a little more than an inch below the top of the pot, then work fresh soil between the roots, not huddling them, and settle it with a few sharp raps on the bench; press down with the fingers, add more, finish level and quite firm an inch below the rim, stand the plant out of the sun in the shed, and syringe it forthwith. The whole process should be done in two or three minutes. Proceed with the others in the same way, letting them stand in the shed, keeping the leaves wet and the floor damp.

What next? If we had a sufficiently deep pit we should arrange them in it on a bed of damp ashes, put down the lights, and shade heavily if sunny, and syringe as often as necessary for keeping the leaves fresh. If we had no such pit we should make a shelter with stakes and mats all round, with rails across for supporting mats over the plants; stand these on tiles or ashes, keeping the base moist, and syringe as before; also expose to night dew.

With the leaves still fresh, the second day after repotting would probably be soon enough for giving the soil a thorough watering, which, with the syringing and shading, may last for a week. By that time if the leaves never flag, as they will not if kept wet, fresh root action will have commenced, then syringing and shading must be gradually reduced, and the plants will soon endure and enjoy full exposure. They must never get too dry at the roots before water is given, and the freer the root action and growth the more frequent the supplies, always copious, will be needed.

By such treatment, properly carried out, we should bring the plants round, ripen their wood during August and September, and not repot them in the autumn; but top-dress when starting them into growth. As to starting and blooming "Bryn" sets us a poser. He wants to "secure blooms in February and March, starting the Roses with Vines about that time." We give it up, as our Roses require a few weeks of growth after starting before they unfold their welcome blooms.]

HALESIA TETRAPTERA.

THE spray of flowers sent by "R. C. N." for identification represents *Halesia tetraptera*, popularly called the Snowdrop Tree, in splendid condition. It is not commonly planted, but it has a good habit of growth with pleasing foliage, and when in flower in early summer it is highly interesting, as the branches all bear a large number of pendant white flowers (fig. 111), which have a strong resemblance to the Snowdrop. It will grow freely and bloom profusely if planted in any garden amongst a general collection of trees, and all who know anything of good shrubs will always regard it as valuable.

PATCHY POTATO BREADTHS.

"W. S." asks, on page 491, for my remarks on the general condition of Potato breadth this season. They entirely coincide with his own, for generally I find the plants to be very irregular, having come indifferently, some coming late, and not a few making no growth. Now what are the causes of this irregularity? First there is the undoubted fact that whilst in hot dry seasons the Potato murrain or fungus does attack the plants, yet its effects are so much mitigated that thoroughly diseased or rotten tubers are uncommon. But in many of them there are fungus spores all the same, that are by the drought rather driven in than out. Were there much moisture in the soil the spores would soon run through the tubers and destroy them. For lack of the moisture the spores remain almost inactive, but still are there. Numbers of such tubers are planted in the spring, the planter not suspecting the presence of the fungus so concealed in them.

Many of these tubers put into the damp cold soil decay entirely, others sending up weak shoots, and late. Then there is the fact that open mild winters, such as the past one was, render the keeping of seed Potatoes restful a matter of exceeding difficulty; with many, except where favoured with stores of exceptionally cool temperature, impossible. Premature growth ensues, and either has to be rubbed off, or if allowed to remain, becomes long and weak, unless the tubers be kept not only in full light but in the air, and cool, even if the premature shoots thus

made be ever so carefully preserved there is the possibility that they may become broken in the planting, or may be injured by insects or other pests in the soil.

Then there is the undoubted fact that during the past spring the soil was as a rule very cold. I found its temperature to seriously affect the tuber-growth even when the planting was not done until the second week in April, and that is not early. In every case the sets were carefully selected, had been for some time exposed to light and air, and were, of course, all fully sprouted. But because the soil was so cold growth was most irregular, and it was some time ere any degree of evenness in growth was manifest. The breadths I have so far seen were on light porous warm soils, but still even on these soils there was seen ample irregularity.

Did we regard Potatoes more as tender warmth-loving plants than we



FIG. 111.—HALESIA TETRAPTERA.

do, we should defer the planting until we were in the month of May. No extent of growth seems to render Potato plants any more hardy. The native tenderness of the plant remains. Could we in our so common mild winters but manage to keep the seed tubers thoroughly at rest, and then were to plant them later, probably few blanks in the breadth would be seen. Even then there would always be possible trouble through dormant disease spores, but I do think the primary cause of irregular growth is to be found in the other cause I have indicated.—A. D.

UNDER this heading, "W. S." has drawn attention to a matter that might with advantage bear some investigation at the hands of your readers. Although not suffering in that respect, I can fully endorse the opinion that this year there are more failures amongst Potatoes than can be remembered for many seasons. I was recently inspecting what ought to have been a fine breadth of Reliance, and failures in scores were to be counted in one part, and on inspection we found many of those that had been cut to be quite decayed, the whole "sets" showing much the better average in every respect. From this I should imagine that the cold and rain immediately following planting had much to do with it, especially as the ground is of a heavy nature.—R. P. R.



RECENT WEATHER IN LONDON.—We have had a very refreshing shower since our last issue went to the machines, but by no means sufficient rain has fallen to penetrate to the roots of plants. On Saturday it was bright and warm, a pleasant shower falling on Sunday evening. Monday was close, dull, and threatening, and on Tuesday morning came the shower above referred to. The later hours of Tuesday were fine, as was Wednesday morning.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, June 27th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. On this occasion special prizes will be offered for Roses, and at three o'clock a lecture on "Some of the Plants Exhibited," will be given by the Rev. Prof. Geo. Henslow, M.A.

— THE R.H.S. COMMITTEES.—The Council have issued their now customary invitations to the members of the respective Committees, a rather large body conjointly, to lunch at Chiswick on July 11th. Should other than members of the different Committees be invited to take part in the Conference on hybridisation, arranged for that day and the following one, the luncheon party will be a very large one. No doubt care will be taken, that apart from the special subjects of interest relating to hybridisation, that a good show will be provided, and also that there will be ample work for the Committees. No doubt also the gardens will be looking at their best: but it is hoped ere then, and indeed speedily, rain will come, as it is now much needed. The Chiswick gathering should constitute the most pleasant of all the Society's reunions.

— PEA HARBINGER.—This has been my best early Pea this season, and it is a variety that is worthy of extended culture, being extremely free bearing, and of excellent quality. When the size of a quarter of ground is taken into consideration, this will produce quite as many good pods as any other kind, and it is earlier than Chelsea Gem. The peas have a nice marrow flavour, and the pods, though not large, are well filled. It is also an excellent forcing variety, good for growing in frames or any chance places where there is a little room to be filled up under glass. I grew a row of it in a centre bed in a cool Peach house this year, and the quality was equally as good then as now that we are gathering from the outside rows. I have not tried it for sowing late for autumn gatherings, as for this purpose I usually rely upon Autocrat, and that very free bearing, though not first-rate sort, William I. May Queen is another good variety, and this I always grow as much of as possible. I sowed it one year in June, but it was not altogether a success, though I never had a poor crop from early sowings either outside or in. The weather lately has been very trying for Peas, cold east wind at night, and broiling sun by day, checking the plants and making them very liable to insect attacks.—H. R. RICHARDS.

— TROPEOLUM SPECIOSUM FROM SEED.—I notice in a recent number of the *Journal of Horticulture* that some of the readers have experienced a difficulty in growing the lovely scarlet *Tropeolum speciosum*. I wonder if they have tried sowing seed instead of transplanting? I know this has and does answer, and, in fact, the great secret of its luxuriance in some parts is on account of the seed germinating on the spot where it fell from the parent plants. I was amused to hear Scotland called damp, and thus supposed to favour its growth. It is some years now since I resided almost permanently in different parts of Scotland, where I am obliged to live on account of avoiding the damp of England. Should you care I would be happy to send you notes of our sufferings from drought, and of the power of the sun even in the depth of winter.—O. F. [We are very much obliged to "O. F."] We have previously heard that the best way of establishing the Flame *Tropeolum* is by sowing seeds where the plants may grow undisturbed. We have seen an example of this in Scotland, and have established the *Tropeolum* by planting fleshy roots in England, but only in a cool, moist, shaded position. Possibly the seeds should be sown as soon as ripe. We shall be glad to have further notes from our correspondent as suggested, indicating the districts in Scotland that are found to be exceptionally dry. The drought has been very serious in its effects in the south-eastern counties of England during the past few years, including the locality in which "D., Deal," has failed to establish the beautiful *Tropeolum* in question.]

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The sixtieth anniversary festival dinner of this Institution will take place on Wednesday next at the Whitehall Rooms, Hotel Métropole, at 6.30 for seven o'clock precisely, when the chair will be taken by the Right Hon. the Earl of Derby, K.G., G.C.B.

— HORTICULTURAL CLUB.—At the usual monthly dinner of the Club, on June 13th, the chair was occupied by Mr. Harry J. Veitch, Vice-Chairman of the Club. The chief business in hand was the arrangement for the dinner to be given to the distinguished foreign visitors who are expected to attend the Hybridisation Conference. The dinner will be given on Tuesday, July 11th, and the chair will be occupied by Sir J. D. T. Llewelyn, Bart., M.P., Chairman of the Club.

— THE LATE MR. T. J. SALTMARSH.—At the meeting of the Fruit Committee, of which body the late Mr. Saltmarsh was an esteemed member, held at the Drill Hall on the 13th inst., Mr. G. Bunyard proposed that a letter of condolence and sympathy be sent from that Committee to the family of the deceased. This was seconded by Mr. A. Dean, and unanimously agreed to. Mr. Saltmarsh was of late, because of weak health, a somewhat infrequent attendant at the Drill Hall, but he was ever welcomed by his colleagues when enabled to attend.

— LILAC ALBA GRANDIFLORA.—I am sending you a sprig or two of this beautiful Lilac, in the hope that the notice of it may be the means of inducing someone who has never grown it to give it a trial. It is infinitely superior in size, substance, and purity to any white variety I have seen. Unlike some of the newer varieties, it blooms quite as freely as the old well-known sorts. Dr. Lindley, rubra, and Philemon, planted at the same time, and in the same situation, are not nearly so free either in growth or bloom, although their flowers are fine; in a more congenial clime perhaps they may do better.—N. N. [The fragrant flowers were magnificent, and quite twice the size of the old-fashioned variety that our correspondent enclosed for comparison.]

— FRUIT OF COMMON ALMOND.—It may not be generally known that the green fruit of the common Almond, *Amygdalus communis*, equally with that of the Sweet Almond, *A. c. dulcis*, is excellent for tarts and for preserving; in sugar, like green Apricots. The fruit must be young, about the size of pickling Walnuts, and before the stone has formed. The crop, despite the frosts of March, is a good one this season, and may be turned to useful service, especially as Gooseberries are not over-plentiful, and as for Apricots, they seem to get scarcer every year. The Sweet Almond, like the Apricot, flowers too early, and is too tender for culture in this country as standards. But the common Almond thrives on all well drained soils, and bears freely in the southern and midland counties, appearing to like the light soils or gravels of the oolite and chalk formations. Why not cross the common Almond with Peaches, and raise a hardy race of Peaches and Nectarines?—G. ABBEY.

— MALCOLM DUNN MEMORIAL FUND.—The news of the sudden death of Mr. Malcolm Dunn, on 11th May, at Dalkeith Palace Gardens, where he had been gardener for nearly twenty-eight years, must have come upon all who knew him as a great shock. Although a gardener by profession, his interest did not end there. Horticulture, botany, and arboriculture are to-day all reaping the benefit of his great energy and devotion. Looking to this general interest displayed by Mr. Dunn, it has been agreed upon by the Royal Caledonian Horticultural Society, the Botanical Society of Edinburgh, the Royal Scottish Arboricultural Society, and the Scottish Horticultural Association, with all of which he was intimately identified, to unite in issuing a joint appeal to the many friends of Mr. Dunn throughout England, Scotland, and Ireland for funds to perpetuate his memory; and it is proposed that, after erecting a suitable monument in Dalkeith Cemetery, the balance should be devoted to charitable and educational objects in connection with horticulture and arboriculture. In issuing this appeal, the Councils of the four societies feel assured that there are very many who will gladly join in raising such a memorial as is proposed, and thus testify to their appreciation of Mr. Dunn's worth, and to the kindly help and advice which he so freely gave. Subscriptions will be received and acknowledged by any of the undersigned. In name of the respective Societies, P. Murray Thomson, Secretary, Royal Caledonian Horticultural Society, 5, York Place, Edinburgh; James A. Terras, Assistant-Secretary, Botanical Society of Edinburgh, 21, Teviot Place, Edinburgh; Robert Galloway, Secretary, Royal Scottish Arboricultural Society, 5, St. Andrew Square, Edinburgh; and Robert Laird, Secretary, Scottish Horticultural Association, 17, Frederick Street, Edinburgh. [We publish the above from a circular that is being distributed this week, and the object of it cannot but receive the sympathy and support of Mr. Dunn's many friends.]

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
June.										
Sunday ..11	E.S.E.	deg. 53.6	deg. 50.8	deg. 63.9	deg. 46.5	ins. —	deg. 62.4	deg. 59.9	deg. 55.2	deg. 37.5
Monday ..12	N.N.W.	59.9	55.8	70.7	44.7	—	60.9	59.5	55.5	37.0
Tuesday 13	N.N.E.	58.9	51.8	60.8	48.5	—	62.5	59.8	55.6	39.9
Wed'sday 14	N.N.E.	50.7	46.7	61.1	41.8	—	60.5	59.8	55.6	31.0
Thursday 15	N.N.E.	61.9	53.6	71.4	39.3	—	58.9	58.1	55.9	27.7
Friday ..16	E.N.E.	62.0	53.9	75.2	42.0	—	61.6	59.2	55.9	34.1
Saturday 17	E.S.E.	63.6	57.3	75.5	45.9	—	62.9	59.9	55.9	36.3
MEANS ..		58.7	52.8	68.4	44.1	Total —	61.4	59.5	55.7	34.8

The weather has been generally dull, with drying winds from the north and east, with very cold nights.

— THE WEATHER.—In London on Friday was the twenty-third, and in most other parts of the country the twenty-second, day without rain, the spell of drought in the metropolis having been exceeded only three times in the course of the past thirty-four years. In the spring of 1893 there was a period of thirty days without rain, in the summer of 1887 a period of twenty-five days, and in June, 1865, a period of twenty-six rainless days. During Thursday and Friday a gradual rise of temperature has taken place over England. On Wednesday the thermometer in London did not rise above 60° all day, but on Thursday it reached a maximum of 73°, while in the course of Friday it rose to 77°. Friday's temperature was, in fact, 8° above the average. Since this day, however, there has been a distinct change, as noted above.

— SENEIO DORONICUM.—Compared with such as *S. pulcher* and others, this is not a particularly strong growing plant, but it is a very free flowering and useful one. The blossoms are of that beautiful rich golden tint that is so much admired in flowers for cutting, and they last well in water. The plants do best in an open, free working soil, where they can spread out freely and make bold clumps. The plants do not grow very freely for a year or so after planting, but once well established they come away vigorously, and the quality of the flowers is distinctly good. It is easily propagated by division.—R. BURY.

— Highbury Notes.—*Begonia corallina* at the present time makes a conspicuous feature in the long corridor attached to the Orchid and other plant structures at Highbury. Nothing could be more beautiful than the effect produced by the profusion of elegant coral red inflorescence and acutely pointed oval-shaped foliage depending from the roof. I think it may be safely said that no other species of the genus can eclipse this in the combined attributes, beautiful as many of the forms may be, not even excluding the dainty *Gloire de Lorraine* or the splendid tuberous hybrids. *Apropos* of the notice by "C. H." page 490, of *Clerodendron fallax*, it may be additionally interesting to remark that on a recent call I was agreeably surprised to find a house full of my old favourite in brilliant array intermixed with a foundation of Maidenhair Ferns. Mr. Deacon informed me that the plant is much admired by Mr. Chamberlain and the members of his family, as indeed it well deserves to be. It may be added that the plant is also extensively grown by Mr. W. B. Latham at the Birmingham Botanical Gardens.—W. G.

— THE ART OF ADVERTISING.—The amount of skill that has of late years been brought to bear on advertising is enormous. On every hand may daily be seen the power of some ingenious brain directed towards the public for the benefit of some commodity valuable or otherwise. Now we have before us a book entitled "The Art of Advertising—Its History and Practice Fully Described," by Mr. W. Stead, jun., and published by Messrs. T. B. Browne, Limited, Queen Victoria Street. As this firm must be classed as one of the most successful advertising agencies in the world it may be taken for granted that its directors would choose a man of mark to write such a book. This is, indeed, the case, for the work teems with information that must be of value to every diligent student of its pages. It is admirably printed on good paper, and splendidly illustrated. All our professional readers should get a copy, for they must agree that Macaulay's lines, quoted by the author, "Advertising is to business what steam is to machinery, the grand propelling power," were never truer than they are to-day when competition is on every hand so keen.

— GARDENING APPOINTMENT.—Mr. Geo. Lilley, for the past seven years general foreman at Shipley Hall, Derby, has been appointed head gardener to H. E. Barclay, Esq., Gaddesby Hall, Leicester, commencing from July 1st.

— SHIRLEY GARDENERS' ASSOCIATION.—The monthly meeting of above Society was held at the Parish Rooms, Shirley, Southampton, on Monday the 19th inst., there being a good attendance, presided over by W. F. G. Spranger, Esq., J.P. The lecture was under the auspices of the Technical Education Committee Southampton County Council, and was given by Mr. W. Wheeler of Messrs. Hugh Low & Co.'s Nurseries, London, whose subject was a large one—namely, "Ferns and Palms," and in dealing with it he showed considerable artistic talent and resource, speaking first of the natural beauty and usefulness of Ferns, their adaptability to all situations, their comparative easiness of culture. Mr. Wheeler next gave the method of culture adopted by those who turn out vast quantities of well-grown plants year by year. Heat, moisture, watering, the use of fertilisers, and manures were in turn considered, also the insect pests, and the best means of destroying them. Then Palms came in for a share of attention, all the best kinds for decoration receiving due attention.

— FRUITING OF OAKS.—It is not generally known to the average lover of trees, though botanists are well acquainted with the fact, that some Oaks take over a year to mature the acorns. The little flower in the axils of the leaves, when the new growth is just starting, receives the pollen from the long, twine-like catkins that hang like tassels all over the branches, and then go to rest for the season. The next year when the new flowers are going through the same process, the little germs fertilised the season before take on renewed activity, and by the autumn of this second season are mature acorns. Only the section classed as white Oaks go through the whole process from fertilisation to maturity the same season. Of those that are natives of the Atlantic States are *Quercus alba*, *Q. obtusiloba*, *Q. macrocarpa*, *Q. bicolor*, *Q. Prinus*, *Q. Prinus pumila*, and the Live Oak, *Quercus virens*. All the other species take two seasons to perfect their acorns. In some seasons the male flowers, which are more susceptible to heat than the females, come to a polleniferous stage before the fruit-bearing flowers have advanced sufficiently to profit by the pollen. In these cases the crop of acorns fails for a season. And this is true of all amentaceous plants. A crop of nuts of any kind is dependent on the period of maturity of the catkins. In the more northern regions, where there are but few extra warm days in the winter season, the nut crop is more uniform in successive years.—("Meehan's Monthly.")

— A DAY AT HODSOCK PRIORY.—On Thursday last, by the kind permission of Mrs. Mellish, the beautiful gardens and grounds of Hodsock Priory were thrown open to the public at a small fee, the proceeds being in aid of the Gardeners' Royal Benevolent Institution—one which is very popular in the district, where its benefits have been largely experienced. There are at the present time 240 recipients of its benevolences, seventeen of whom were elected at the last distribution out of sixty-five applicants, and the only one locally supported—at the nomination of Mr. Mallender, the head gardener at Hodsock—was amongst the successful number. Mr. Mallender is a loyal supporter of the fund, and it was at his suggestion that Mrs. Mellish kindly threw open the grounds. Favoured by beautiful weather, there was a large attendance from all parts of the surrounding district, and altogether the visitors spent a very pleasant time. The grounds may appear brighter in the Daffodil or Lilac seasons, or in the Rose season, but still there is no lack of flowers, particularly as Hodsock is noted for its collection of the more especially hardy blooms. It is an old world kind of garden, one of those whose beauty lies rather in its variety of landscape. At every turn one comes upon something unexpected. Its geographical conformation contributes to this charm, and in its mazy meandering paths, amidst well-wooded surroundings, the visitors enjoyed its artistic irregularity to the full. The gardens are famous, and have been for many years, for their variety of Roses. Almost every new variety and many old ones are to be found here, but as the season is late they are not yet seen to advantage. The principal flowers just now are the German and Spanish Iris in the full glory of bloom, the very showy Oriental Poppy, several varieties of Pæonies, the rare Fly Orchid, and the Lady's Slipper Orchid. The arboreal beauties of a well-wooded landscape are some splendid Beech and Sycamore, and the finest specimens of the *Picea Pinsapo* anywhere in the district. The Rhododendrons alone are well worthy of a visit. The single Roses are just showing themselves, some of them very rare and beautiful, but they share in their shyness the general lateness of the season.—("Retford Times.")

— **MARRIAGE OF MR. E. T. GILMAN.**—On Wednesday, 14th inst., the marriage of Mr. E. T. Gilman with Miss E. Butters was solemnised at St. George's, Hanover Square. Mr. Gilman has for some years had charge of the gardens at Alton Towers, one of the estates of the Earl of Shrewsbury and Talbot. The ceremony was largely attended by the friends of both parties, and the reception was held, by the kindness of Mrs. Alfred Morrison, at 26, Bruton Street. Mr. and Mrs. Gilman left for Brighton in the afternoon.

— **A FAILURE AT MAIDSTONE.**—Amidst the many successes at the Royal Agricultural Society's show at Maidstone a daily paper records a failure in one section as follows:—"Kent is a great fruit county, and it was supposed that there would have been competition for the special prizes for (1) Machine for the evaporation of fruit and vegetables; (2) Carriage packages for soft fruit; (3) Ditto for hard fruit. But the offers of the Maidstone Committee do not seem to have aroused enthusiasm, for No. 1 there was no entry, upon No. 2 the Judges decided there were 'no entries worthy of merit,' and upon No. 3, 'no entries suitable for commercial purposes.'"

— **LATE BROCCOLI.**—As your correspondent, "A.," page 491, asks "If in Yorkshire there are white Broccoli well into June," I have pleasure in informing him that I am now, June 17th, cutting heads of Dicksons' June King 10 inches over perfectly solid and white, and shall go on cutting for at least another week. Last year we cut the last head of this variety on June 24th. It is a long way the latest Broccoli I know. Model, Late Queen, and others, were over with me at the end of May. It is very dwarf, perfectly hardy, tender, and mild in flavour when cooked.—**SOUTH YORKS.**

— "A." seems to think June late for Broccoli, but we are then seldom without good heads, and I have still some fine Queens left. There is nothing extraordinary in this, and any other gardener may get them easily, but as a rule in private gardens there are plenty of nice young heads of Cauliflower from hand-light or frame plants, and this being the case Broccoli is not in demand. Want of space to devote to the former is the cause of my planting more late Broccoli than I should otherwise do. I may say that far from being in a cold place, the bed devoted to Late Queen this year is a warm and sheltered one, a high bank covered with Laurels screening it from north and east winds. Had a few of the plants been pulled and laid in a cool place they would have held out at least until the end of the month.—**H. B., Suffolk.** [We have received (though misdirected) two close heads of Broccoli well enveloped in their own leaves, but no letter concerning them. They appear to have been posted in Leicestershire.]

— **WATERER'S RHODODENDRONS.**—Londoners are not likely to see in town this season a finer display of Rhododendrons than that now being made by Messrs. John Waterer & Sons in the Royal Botanic Society's gardens. There are in the collection a thousand plants, differing largely as to size and colour, and arranged with a very clear perception of artistic beauty. In form the plants are mostly standards, ranging, both in height and breadth, from a foot or two to several feet. But it is the wealth of colour that attracts. White, blush-white, ivory, pink, purple, red, scarlet, crimson, and many other tints are there, and wherever one looks there is some striking view. This is partly due to the fact that within a commodious marquise beds and banks and undulating walks have been made with an eye to effect, and that the plants have been grouped with discriminating taste. The show has been visited by the Duke of Connaught.

— **OUR HAPPY OCTOGENARIAN.**—When the subject of anti-blight cropped up in "our Journal" last spring, the prevention of mildew on Roses and Honeysuckles in my greenhouse, a number of letters on the subject arrived to me, including one from Mr. John Strange of Aldermaston, our noted amateur rosarian, asking where he could get the powder and the bellows I recommended. He was in great tribulation, being pestered with the mildew in his houses. Of course I gave him all particulars. As time passed I felt anxious to know what success had attended my instructions, so I wrote and asked him to kindly let me know. Mr. Strange "biked" over to me the day after he received my letter, and said the powder with him was a grand success, had eradicated the mildew, and he "now felt glad for three things"—the dispersion of fungoids, the annihilation of aphids, and the possession of a manure to grow his favourite flower to perfection, which he does. The new hybrid seedling Potatoes from the Fendleri, and my old International Kidney, were planted on her Majesty's birthday, and at the termination of their committal to the ground we sang "God Save the Queen."—**ROBT. FENN.**

— **POT VINES.**—I am taking nice bunches of Black Hamburg from pot Vines, the eyes having been inserted in March, 1898. Where there is room in any of the fruit houses to train a few canes of this and Foster's Seedling, they are well worth growing. The chief points to be considered are the choice of hard well-ripened wood for the eyes, careful treatment in the earlier stages, so that no check occurs to the growth, and a regular system of pinching the leader at every couple of feet, so that the canes when finished are about an equal thickness throughout. The last repotting should take place not later than the end of June, and feeding with a good fertiliser should commence as soon as the roots are through the soil. Place the young Vines outside in August, and allow them to be thoroughly ripened by the waning sun in autumn. In any warm, moist, and light house these canes may be forced, and useful Grapes produced before midsummer.—**H. R.**

LIVERPOOL NOTES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

LANCASHIRE gardeners especially will rejoice that the Earl of Derby is to take the chair at the forthcoming festival dinner, to be held on June 28th. Lord Derby's sympathy with all charitable movements is so far-reaching, and his ability as a speaker so well known, that we feel sure he will plead the cause with no uncertain sound, and it would not be astonishing to find more support from Lancashire than has previously been forthcoming.

Already a Liverpool citizen, T. Sutton Timmis, Esq., of Cleveley, Allerton, has signified his intention of contributing £50, and no doubt other Liverpool gentlemen will follow in his steps, and so make up a most favourable sum. Mr. Timmis' sympathy is with all classes, but none more so than with gardens and gardeners, his beautiful house and grounds, with model greenhouses, stocked with the choicest plants, and so ably presided over by Mr. B. Cromwell, the respected head gardener, being kept up in the best possible manner.

It has been said that the Charity does not benefit Liverpool to any great extent, but the fact remains that many aged and distressed are waiting patiently for willing hearts and hands to come to their assistance, and we should not be surprised if Mr. R. G. Waterman—who is a life member for this district—does not send something tangible for charity's sake, apart from any benefits that might accrue.

HARDY AZALEAS.

Equally useful for forcing or planting out, these floriferous Azaleas score a decided success, for surely nothing looks more charming in a greenhouse in the spring months, or outdoors in early summer. I was privileged to see a fine collection recently, not all the mollis types, as are too often met with, but types, although smaller in flower, which give a welcome relief when used for decorative purposes. I noted the following, as they are all so well worth growing—occidentalis, rustica plena, Daviesi, Anthony Koster, and mollis sinensis.

POTATOES AND PEAS.

We are about commencing to lift our first outdoor Potatoes, and despite the fact that the tops of Harbinger were cut down once by the early frosts, it is a long way in advance as a cropper of any other early variety in the garden. The habit is so compact as to allow of any Winter Greens to be planted in between, and not at all interfere with the Potatoes. Having tried the variety, I have come to the conclusion that it wants some beating.

A fine early Pea is Indispensable, which we are now picking. In habit of growth it resembles Telephone, but is much dwarfer, growing to a height of 3 feet. The peas are large, sugary, and pods well filled—altogether an acquisition, and earlier than William Hurst.

THE WEATHER.

For the past twenty-two days we have been entirely without rain, the sun meanwhile being so hot as to cause nearly all kinds of crops to begin to feel the effects from it, and in many cases only persistent watering has kept vegetation in a healthy condition. The ground, too, has been in a sodden condition owing to so much wet and cold, followed by a baking sun; but a change has taken place, and we are now having gentle showers, and dust-laden trees look quite refreshed. The rain is all the more welcome on account of the Strawberry crop, the fruits of which were almost at a standstill, whilst aphides on Gooseberry bushes have never been seen in such numbers.

DRY WEATHER FLOWERS.

Scarcely ever have we had such a fleeting time amongst outdoor flowers, Azaleas, Rhododendrons, and other flowering shrubs exposed to the full sunshine going more rapidly than usual. Yet in spite of this we have at the present time three sorts that have done us good service—viz., the chaste and beautiful Spanish Irises planted on a dry southern bank have contained in mixture such exquisite hues as to rival any class of plants in cultivation. The Pyrethrums, too, are of the greatest importance, and have been for the past three weeks able to defy the hottest weather. I have noticed some magnificent new shades among the single varieties, and judging from the appearance of lady purchasers in the shops and markets, there is no disputing the fact as to which are held most in popular favour. The Oriental Poppies have been unusually handsome, their giant flowers and intense colouring making them worthy objects for all classes.—**R. P. R.**

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION OF HYBRID PLANTS.

WE have received at the moment of going to press a budget of information relative to the Society's Examination in Horticulture, in which we observe that Mr. H. H. Eaton, County Technical School, Stafford, heads the list with 285 marks, and to the International Conference on Hybridisation to be opened at Chiswick on July 11th and concluded at the Town Hall, Westminster, on the following day, but this week we can only find space for the following particulars of the medals that have been offered.

1, A Veitch Memorial Medal to the raiser of the best new fruit intentionally raised by cross-breeding or hybridisation in Great Britain, and never previously exhibited.

2, A Veitch Memorial Medal to the raiser of the best new flower (Orchids excluded) intentionally raised by cross-breeding or hybridisation in Great Britain, and never previously exhibited.

3, A Veitch Memorial Medal to the raiser of the best new Orchid intentionally raised by cross-breeding or hybridisation in Great Britain, and never previously exhibited.

4, A Veitch Memorial Medal to the raiser of the best new vegetable intentionally raised by cross-breeding or hybridisation in Great Britain, and never previously exhibited.

5, A Veitch Memorial Medal to the raiser of the best new fruit intentionally raised by cross-breeding or hybridisation out of Great Britain, and never previously exhibited.

6, A Veitch Memorial Medal to the raiser of the best new flower (Orchids excluded) intentionally raised by cross-breeding or hybridisation out of Great Britain, and never previously exhibited.

7, A Veitch Memorial Medal to the raiser of the best new Orchid intentionally raised by cross-breeding or hybridisation out of Great Britain, and never previously exhibited.

8, A Veitch Memorial Medal to the raiser of the best new vegetable intentionally raised by cross-breeding or hybridisation out of Great Britain, and never previously exhibited.

The above medals will only be awarded should the exhibits be considered sufficiently meritorious, and the result of intentional, not accidental, cross-fertilisation.

Exhibitors must give full details in writing as to parentage, and record any other points which may assist the Judges.

9, A Williams Memorial Medal to the best collection of hybrid and cross-bred plants.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Rev. W. Wilks, Rev. C. Wolley Dod, Prof. A. H. Church, and Rev. Prof. G. Henslow, Hon. Sec.

Panax Marstersianus.—Dr. Masters exhibited a flowering spray of this plant, which probably came from New Guinea. It has never been thoroughly described hitherto, as no flowers had been seen. Dr. Masters undertook to examine them, which appeared to be all male, and report upon it.

Cattleya Mossiae.—He also exhibited a blossom of this Orchid strangely malformed, which he also undertook to examine.

Lilac with central (terminal) bud aborted.—He brought sprays to show the presence of this bud lying between two opposite fully formed buds. It is said to be always aborted by frost; but as it is invariably the case, it would be more likely to be atrophied, in consequence of all the nourishment being conveyed into the two opposite buds.

Hemerocallis leaf diseased.—Dr. Smith reports as follows upon leaves sent to the last meeting:—"The reddish spots on leaf sent are caused by a fungus. Each spot is $\frac{1}{4}$ to $\frac{1}{2}$ -inch diameter, and consists of a patch of cavities (pycnidia) sunk in the leaf tissue. From these tiny conidia are given off to disperse the fungus. In addition to the internal pycnidia, another form of pycnidium is formed on the surface, when a portion of the leaf with spots is kept in a moist chamber; these latter also give off tiny conidia. The forms of pycnidium and their structure refer the fungus to the genus *Asteroma*. Farlow, in his 'Host Index for U.S. America,' gives a form *Asteroma Lineola*, the pycnidial stage of *Dothidea Lineola*. The ascospore or *Dothidea* stage is not present, as far as I can see, on leaf sent."

Diseased Peach.—The following is also Dr. W. G. Smith's report:—"The fruit sent showed a large patch of fungus mycelium with conidia. Two forms of conidia occurred, by which the rot might be referred either to black spot disease (*Cladosporium carpophilum*) or the fruit rot (*Monilia fructigena*). In transit the fungus spot appears to have enlarged enormously, and it looked quite unlike what one generally sees in either of the above Peach diseases. In any case it is a distinct fruit rot, and controllable by spraying methods."

Peridermium Plowrighti (Kleb).—The following communication was received from Dr. Plowright, with illustrative specimens:—"The specimens of *Peridermium* sent herewith were produced by artificial culture, and afford an illustration of how easy a matter it is to unravel a mystery when one once has the clue to it. It is just twenty-five years ago since Wolff showed that *Coleosporium senecionis* was connected with *Peridermium pini* on *Pinus sylvestris*. This *Peridermium* is frequent upon the Fir trees near King's Lynn, so that I had ample opportunity of confirming Wolff's observations. As a matter of fact, between the years 1881 and 1888, on ten separate and distinct occasions, I did apply the spores of *Peridermium pini* to *Senecio vulgaris*. Once, and once only, did I succeed in producing the uredo on the last named plant. My non-

success I attributed to some error in manipulation, and as I was engaged with other species I did not follow the research up. Dr. Klebahn of Hamburg, however, set about the problem, and soon cleared the matter up. He showed that the *Coleosporia* as a genus had their aecidiospores on *Pinus sylvestris*, and not *C. senecionis* alone. The species on *Tussilago Farfara*, which is exceedingly common all over England, was one of the forms to which Dr. Klebahn directed his attention, and he gave the above name to its aecidiospores. The specimens sent herewith were produced by artificial culture. On October 16th, 1898, a leaf of Colts-foot, with the teliospores of *Colcosporium tussilaginis* abundantly upon it, was fastened upon young *Pinus sylvestris*; on February 20th suspicious spots began to show, but it was [not] until April 22nd that an abundant development of the *Peridermium* was observed. On that date the Colts-foot leaf was still attached to the Fir, and the most abundant development of *Peridermium* was seen to be immediately beneath it. As this experiment was performed some three miles from my house the plants were not visited so often as they otherwise would have been. On April 25th two young plants of *Tussilago Farfara* were infected with the above aecidiospores, and on May 13th each was found to be abundantly affected with the uredo of *Coleosporium tussilaginis*; they were gathered, and are also sent herewith. I have to thank Mr. Walter Scott of the Golden Ball Nurseries for the material employed in these cultures, and Mr. Rodgers for his assistance in looking after the plants."

EXPERIMENT No. 1243.—*Colcosporium tussilaginis* placed on a young plant of *Pinus sylvestris* (infecting): Material wired on to the tree 16th October, 1898; *Spermogonia* observed 20th February. *Peridermium Plowrighti* abundantly produced and fully developed 22nd April, 1898.

EXPERIMENTS 1264-1265.—Two young plants of *Tussilago Farfara* infected on 25th April, 1899, with aecidiospores of *Peridermium Plowrighti* from Experiment 1243, perfect uredo gathered 15th May.

HARDY FRUITS AND "PLOWING."

AFTER your kindly notice of my little pamphlet upon the above subject, I feel that it would be unkind on my part if I set in motion the law of libel. Steal, Sir, no, I trust I have not descended to that level! The mere accusation would be enough to give me a sleepless night, were it not that a good conscience (on this point) sustains me. I might say a good deal in reply, but no doubt many of your readers will have discovered, like myself, that wide and deep as your reading has been, and infallible as an Editor of course is, there is one good old book on farming which you have not studied as deeply as you might have done.

The book in question is not only the best in the English language, but the oldest and one of the highest authorities on orthography, and yet I find—amongst many other sayings upon plows, plowing and plowmen—the following, "The sluggard will not plow by reason of the cold," "Doth the plowman plow all day to sow?" "The plowman shall overtake the reaper," and so on. Mr. Editor, I need not tell you the name of the book, your active mind will long since have grasped the situation, and have by this time found out a graceful way of "climbing down" (now this is stealing from our American cousins).

I shall not give you the exact references to find the quotations given above, for in searching for them you will, I am sure, find much that is instructive, and if you discover nothing else you will find that many so-called Americanisms are simply the good old English of our forefathers, carried over by the pilgrim fathers and retained, whilst we have changed our spelling and pronunciation. Mr. Editor, we are both Midlanders, "dog does not eat dog," and having vindicated myself from the charge of theft, I am willing to bury the hatchet. I know you will print this (though I could not say the same of all Editors), so until next week I must try to possess my soul in patience.—A. H. PEARSON.

[Yes, certainly, we print it with pleasure. It is just the sort of light reading that acts as a counterpoise to the heavy matter that so largely abounds, and the sparkles of literary morality are especially welcome as coming from the pen of he who introduced the now famous line, "He writeth best who stealeth best," and who even confesses to a little "stealing" now, for the italics in the above proof sentence are his own.

It is not necessary to refer to the Biblical citations. They are admitted, and our friend is congratulated accordingly. We believe there is much truth in the proposition that many so-called new American words are old English exportations. We can well remember some of them in common use by the old folk along the east coast half a century ago, but now practically obsolete at home. They may have travelled westwards into the Midlands, even as far as Chilwell. Wisdom is always supposed to have come from the East. The Editor is not a "Midlander," and would "rather" like to draw his acute and genial correspondent again.]

MELONS.—Up to the present time this year no Melon, old or new, seems to have shown, so far as quality is concerned, good flavour. The fruits of Hero of Lockinge and William Tillery, both first-class old varieties, shown recently, and perfect in production, both lacked flavour, yet there has been no lack of sunshine. New varieties also so far have met with no approval. We have no such uncertain fruits as Melons. It is possible some good ones will crop up later, but the Melon season to obtain high class flavour seems to be a short one. It is doubtless intensely disappointing to those who send fruits up to the Drill Hall that look so delicious and tempting, to learn that they are after all devoid of flavour. I fear the Committee are often regarded as incapable of appreciating excellence. Possibly flavour escapes in transit.—A. D.



LÆLIA PURPURATA ANNIE LOUISE.

THOUGH *Lælia purpurata* is undoubtedly one of the handsomest and most popular Orchids in cultivation, it cannot be said that the number of varieties of the highest quality is very great. Now and again we have one of much above the average merit, and when such is the case, it is hailed with pleasure by all orchidists. Such a one is *L. p. Annie Louise*, which was exhibited at the recent Temple Show by G. W. Law Schofield, Esq., Rawtenstall, Manchester, when a first-class certificate was recommended by the Orchid Committee of the Royal Horticultural Society. It is a noble flower. The sepals are very soft rose, and the broad, slightly wavy petals deeper rose, with bright crimson veinings, and a paler base. The superb lip is rich crimson, deepening towards the throat and side lobes. A flower of this form is depicted in the woodcut, fig. 113.

EPIPHRONITIS VEITCHI.

THIS is one of the finest hybrid Orchids (fig. 112) in existence, and, fortunately, it is so easy to grow and so freely propagated, that already



FIG. 112.—EPIPHRONITIS VEITCHI.

it has found its way into many collections which, in the near future, it will doubtless be much more grown. Beautiful bright scarlet blossoms, that last for weeks in perfect order on a plant of singularly graceful habit, are the result of this, one of the most successful crosses ever made. Its parents are *Epidendrum radicans* and *Sophrontitis grandiflora*, and it was raised in Messrs. Veitch's nursery about ten years ago. It thrives well in rather small baskets or pots in a shady part of the Cattleya house.

DENDROBIUM WARDIANUM ALBUM.

The flowers of the true albino of *D. Wardianum* are quite distinct from a form called by some *D. Wardianum candidum*, in which the sepals and petals are pure white, having lost the rosy purple tips, but not the maroon blotches at the base of the lip. The only tint of colour in the true form is a yellow blotch in the centre of the lip, and by this our correspondent can tell whether or not his is the true form. At one of the earlier meetings of the Royal Horticultural Society this year many grand forms of this fine Orchid were shown, among them being a plant of each of those mentioned above. There is not the least doubt about their distinctness.

DENDROBIUM FALCONERI GIGANTEUM.

There is a very close affinity between *D. Falconeri* and *D. Wardianum*, as is shown by this form, which is almost exactly like the older Assam form—really the type from a botanical point of view—of this popular species. The colouring is very beautiful, much brighter than that of the long-stemmed Burmese form of *D. Wardianum*, yet distinct from *D. Falconeri*, which has also shorter pseudo-bulbs. It is rather a difficult plant to grow, the slender stems having less staying power

than the larger ones, and unless considerable care is exercised the young growths are apt to damp badly in spring. Small pots or pans and very little compost are necessary.

THUNIA MARSHALLIANA.

This fine Orchid has done grandly this year, producing fine elegant racemes with nine and ten flowers on each, and every stem has its flower spike. There is no doubt that ample sunlight suits this plant exactly. It will grow and flower freely when the sun shines full on the plants, and the atmosphere is loaded with moisture; but in a dark or shady house, stems a couple of yards in length will be produced without a sign of bloom. The compost should consist of good loam, peat, and moss, and it is usual to repot annually.

THE ATMOSPHERE OF ORCHID HOUSES.

In creating a suitable atmosphere for the growth of Orchids, ventilation, damping, and the supply of ammonia to the air have all to be considered. It is necessary so to balance the elements that one does not preponderate, so to speak, over either of the others. Anyone with a little experience will know how difficult this becomes at times, especially during capricious weather, and when a cold wind is blowing under a bright sun. The careless grower, as a rule, drops his blinds, takes off most of the air, and leaves the plants to take care of themselves as best they may.

The grower who studies the needs of his plants knows that by doing so he would be depriving them of much needed light and air, both being as necessary to the growth of most Orchids as it is to that of a Vine. So by frequent attention he keeps the air constantly changing, yet always correct, and never lowers the shading earlier than is absolutely necessary to protect his plants from the rays of the sun. Needless to say the latter is the more successful, and in this I do not wish to be taken as advising anyone to be constantly running to the blinds and ventilators, but by careful and judicious manipulation of both to strike the proper balance between a close, moist, and shady house on the one hand, and on the other an arid and draughty one with the foliage scorching.

With regard to the supply of ammonia to the atmosphere this is a phase of culture not sufficiently practised, especially with the epiphytal division, that practically live on what that they derive from the atmosphere. There are various methods of supplying this element, and one of the most satisfactory is sprinkling about under the stage a mixture of dry soot and lime in equal proportions. This is only practicable in certain cases, of course, but where possible it is a great aid, the constant and moderate supply caused by the dripping of the water on the soot and lime being just what is needed.

Where any objections are raised to this method recourse may be had to sulphate or carbonate of ammonia, dissolving either of these in water and using it for damping. A little of the former may be put in the evaporating troughs with a good effect. Damping itself is rather under than overdone. If Orchids were watered less at the roots and more through the atmosphere, we should have healthier plants without a doubt. Regarding the admission of air so much depends on circumstances that nothing like definite instructions can be laid down, but I would like to warn readers against the unpractical theorists who advise nailing down the top lights and other methods. Top ventilation should never be overdone, but in its place is very useful.—H. R. R.

AN AMATEUR'S GREENHOUSE.—No. 2.

WHEN I gave the account of the contents of my little greenhouse in what I may call its spring aspect, I said that of course very soon that would be all changed; the bulbs which had mainly contributed to its adornment would be passed, and many of them, such as the Freesias, having been thoroughly baked, would be laid aside for another season. But I said, also, that other plants were in progress to take their place. Of course, where the means at the disposal of owners are much greater than mine, this is a matter of no difficulty; not so where there is but the one house with its small annexe, and yet I think anyone coming into it now, with its overflowing wealth of bloom, will almost think that I have been drawing the long bow when I said that the plants to fill it up were all grown in the one house.

PELARGONIUMS.

They mainly consist of Pelargoniums, which are during the winter in 48-inch pots, and placed on the shelves near the glass. In the month of February these were repotted, mostly in 24-inch pots, and in a compost consisting of loam, old cow manure, well decayed leaf mould, and a little sand. These were either returned to shelves, where they wintered, or placed in the back part of the staging until they began to grow well, and were then afforded a more prominent position. The Pelargoniums belong to the Show and Decorative section, with a few Zonals. I need hardly say that the Show varieties are not so much in evidence as they used to be fifty years ago. We

do not now see the wonderful plants which Mr. Turner of Slough and Mr. Bailey of Shardeloes used to bring to our metropolitan exhibitions: they were marvels of growth and of excellent culture, but there can be no doubt that they had a stiff and formal appearance, and they had to be supported by a forest of sticks, but it was ever to me a matter of wonder how exactly they were all timed to flower at the same moment. Six of these plants would fill a large-sized greenhouse, and the fortunate owner of the plants might take his friends to see and admire them, but not a bloom dare he pluck to give his friend a souvenir of his visit.

In those days, beside the Show Pelargonium, was a class called "Fancies," specimens of which we rarely see nowadays; the foliage of the plants is smaller and neater than that of the Show varieties, and the flowers are also of a different character; moreover, they require a warmer house, and hence it is, I think, they are not so popular, and for one person who grows Fancies, twenty would grow the Show varieties. I never attempted their growth myself, because I could not keep my house sufficiently warm—at least, if I did so, it would be to the detriment of its other inmates. I confine myself, therefore, to the Show and Decorative varieties, and I think perhaps there is an undue preponderance of the latter. I have a strong affection for the former, as they bring to my mind many a pleasant day spent with the late Mr. Hoyle of Reading, and Mr. Charles Turner of Slough. One visit to the former I particularly recollect; he was one of the three who did so much to improve the Show varieties, the other two being Mr. Foster and the Rev. J. Garth. He had taken the trouble to gum into a book petals of some of the flowers of each year, and it was most interesting to see their gradual development from narrow pointed petals to the round and beautifully formed flowers of later years, evidencing what the skill and perseverance of the hybridiser could effect. They could not keep up their popularity, and when what were called by some the Regal Pelargoniums came to the front, the Show varieties had to take a back seat. Some of these came from the Continent, and many from our home raisers, amongst whom were Messrs. Henderson and Bull. These are of a very showy description, and carry large trusses of finely marked and well shaped flowers.

LILIUMS.

Going into my greenhouse now I do not find such a variety as in the earlier filling of the house, but still something worth noticing, and a great quantity of flower. At the far end there are three stately plants of *Lilium Harrisii*, now covered with the beautiful bell-shaped pure white flower. This curious freak of Nature (for one must so regard it) is unsatisfactory in one point, it is essentially an annual—what I mean is, that you cannot place any reliance on it the second year after importation; in fact, when I have turned them out into the open ground, hoping that they might revert to the old longiflorum type, they have mostly perished altogether. Besides these Lilies, I have some of the more recent additions. There is one, however, in which I have been grievously disappointed—namely, *Lilium Dal-Hansoni*. This is a hybrid between the dark Martagon *Lilium dalmaticum* and *Lilium Hansoni*. It was raised by Mr. Powell, of Southboro', Tonbridge Wells. I obtained a bulb of it this year, which grew well, and developed a good head of bloom buds, much after the manner of *Hansoni*, but to my great disappointment they never expanded; why I do not know, except that when I received the bulb it had made a shoot of about 8 inches long, and probably the repotting which was necessary may have given it a check; the plant looks healthy, but alas! it has disappointed me this year.

Another Lily of recent introduction which we owe to the enterprising firm of Wallace & Co. of Colchester, is *Lilium rubellum*. It is of somewhat small growth, and is not more than 18 inches high; it is of a beautiful pink or rose colour, and has a delicate perfume. It received a first-class certificate from the R.H.S., and is perfectly hardy, reasonable in price, and will, no doubt, ere long,

find its way into the gardens of all lovers of hardy herbaceous plants and roots.

I have also some of the very beautiful *Calochorti* or Maiposa Lily, or Butterfly Tulip as it is variously called. Mine are of the Eldorado type, imported by Messrs. Wallace & Co. They seem to be of a more robust character than those previously received, and are certainly very quaint and beautiful. I find them perfectly hardy, although perhaps their beauty is likely to be damaged by the severe weather we sometimes experience when they are in flower. I have some plants of *Primula obconica*; that everlasting bloomer. I have never experienced any injurious effects from handling it, although I cannot question the fact that it does irritate the skin of some people; indeed a lady who called on me the other day, and who is a great lover of flowers, told me she could not stay in the room where there was a plant of it. Whether this was the result of imagination or not I cannot say, I only record the fact.

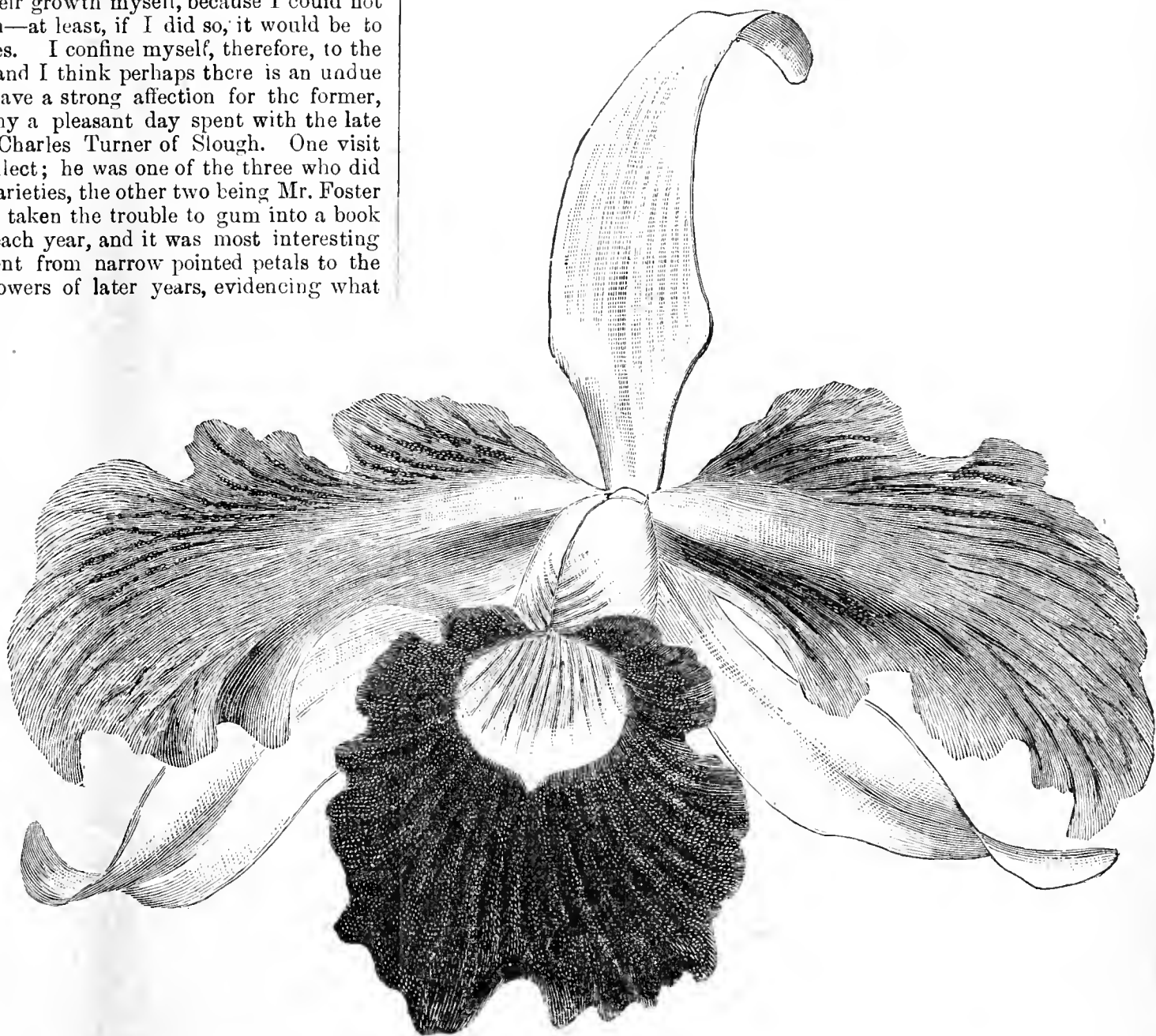


FIG. 113.—*LÆLIA PURPURATA ANNIE LOUISE*.

GLADIOLI AND SCHIZANTHUS.

As a lover of bulbs I could not at this season of the year be without some pots of the dwarf early blooming Gladioli, especially of that delightful form of *Colvilli* which we grow under the name of The Bride; these are now fully in flower, and form a pleasing variety. There is one variety of *Schizanthus* still in flower, *S. retusus*, which I consider the showiest of them all; it is dwarfer in habit, comes later into flower, and is very brilliant. It appears also to be somewhat more delicate, for I get few plants from the packet of seeds that I sow, while the other varieties come up plentifully. I have about four dozen plants of Pelargoniums, and amongst them a few of the curious *echinatum* variety; this, with its sharp spines, is always a puzzle to visitors, who hardly expect to find a "Geranium" with thorns. The flowers are small but very pretty, and as they are borne on long stems they are very good for cutting.

DISAS.

There are two or three plants which always occupy a cherished position in my small house, which are not yet in flower. These are *Disa grandiflora*, and this year *Disa Veitchii*; the former I have grown off and on for five-and-thirty years, sometimes being very successful

with it, and at other times quite failing. Why, I do not know, because I have always adopted the same treatment, but I am afraid it is one of those plants about which there is no certainty. As it seeds freely many seedlings are offered for sale, but as a rule I do not think they are equal to the type in the brilliancy of their colouring or compactness of their habit. There are some places where it has been grown most successfully. I may instance the Cambridge Botanic Gardens, and The Briars, Reigate, while on the other hand I know some of our largest Orchid growers have quite failed to keep it. My plants now look well and seem likely to flower splendidly.

My stages are now completely full, and it may be perhaps asked, What will be the condition of your house when these are removed? Will the stages not be bare? Well, I hope not. On the shelves above I have a fair supply of *Streptocarpus*, which I hope will then make a fair show, while in my annexe I have a number of *Begonias*, double and single, which will no doubt take the place of the *Pelargoniums*.

GREEN FLY.

Of course, as I have already said, I cannot claim all the credit in this success; the plants of *Pelargoniums* which my gardener has produced this year seem to me models of good culture. There is one thing about which we are very particular, that is not to allow aphides to bother us. We can now avoid the nastiness of tobacco smoking by using Macdonald's fumers, which do the work effectively.

I have still a couple of plants of *Calla compacta nana* in flower, but I should not mention them save for the reference which was made in last week's Journal to my request for information about *Calla Pentlandi* and *Elliottiana*, which I regret to say confirms my suspicion that I have not sufficient heat to grow them successfully. Mine is not an intermediate but a cool house, and I thus must give up all hope of growing it. It is most thankless work when time and labour are expended upon plants which, although they may keep alive, have yet no prospect of flowering.—D., *Devil*.

THE VINE IN AUSTRALIA.

IN the course of a paper read before the Australasian Association for the Advancement of Science, Mr. F. B. Kyngdon stated that the first Grape Vine in Australia was planted at Castle Hill, near Sydney, in 1791, by Colonel de la Campe, a French emigré. The first Grape Vine near Parramatta, a few miles from Sydney, and famous for its orangeries, was planted in 1801. After the fall of Napoleon, in 1815, Mr. John Macarthur, a spirited colonist, while in Europe obtained a number of cuttings of the finer varieties of Vine, but the nurseryman to whom they were entrusted for despatch to Sydney, substituted others of an inferior kind. The trick was not discovered until several years afterwards, the soil and climate of the colony being in the meantime blamed for the failure of the experiment.

In 1825 cuttings of the Muscat and Madeira varieties were sent to Sydney, and thrived splendidly. Other cuttings followed, but the British Government refused to grant passages to Continental Vine-dressers, and it was not until 1844 that such men found their way into the colony. Thenceforward the progress of Vine cultivation was rapid, and with its increasing spread the production of wine became a recognised industry. In 1861 there were in New South Wales, Queensland, South Australia, Victoria, and Western Australia 7009 acres under Vine cultivation; in 1896 the area had become increased to 58,642 acres, the product being 5,606,035 gallons of wine, 7901 gallons of brandy, 63,665,280 lbs. of table Grapes, and 2,145,360 lbs. of raisins.

The Grapes grown in New South Wales are equal in size and flavour to the finest grown in Continental Europe, but both their cultivation and the production of wine from them remain imperfectly developed as a whole. In 1897 the area under wine cultivation in the colony was 8061 acres, producing 794,256 gallons of wine, 7134 gallons of brandy, and 6,462,400 lbs. of table Grapes. The raisin manufacture is still one of the industries of the future in New South Wales. In 1893, with 462 acres less under cultivation than in 1897, the quantity of wine produced was 931,542 gallons.

Most of the vineyards are of limited extent, but several are of large size. They are scattered over the whole of the colony, save on the more elevated table-lands and in the sub-tropical regions. There are over 2000 vigneron in the colony, the most successful being Italians, Germans, and Frenchmen, or individuals having some practical knowledge of Vine cultivation as practised in Europe. The colony offers an unlimited field for enterprise in this direction, there being many thousands of acres eminently adapted for Vine cultivation remaining unutilised.

It has been stated by a leading authority that New South Wales is more favourably situated for raisin production than is any of the other colonies, and that when the industry has become introduced and firmly established a large intercolonial and export trade may reasonably be anticipated. Of the 16,695,560 gallons of wine imported into Great Britain in 1896 only 6394 gallons were from New South Wales, most of that produced in the colony being locally consumed. Such is the abundance of Grapes, mostly the black varieties, in the colony, that during the season they are retailed at 1d. per lb. in Sydney, the finest Muscatels bringing from 3d. to 6d. per lb. In the vicinity of the vineyards they are cheaper still.—J. PLUMMER, *Sydney, N.S.W.*

FERNS OUT OF DOORS.

WHERE Ferns grow and flourish the air in the autumn is full of their spores, which are carried about by the currents until they settle. I have known Ferns come up in the hollows of trees, on walls that happened to be damp through the leakage of a water-trough or other cause, on the walls of a cellar, or on the floor of a greenhouse, and where they once make a start in that way they thrive according to the nourishment they receive. In some instances where this has been very limited, they live on for years without increasing in size. But this is not exactly what the cultivator wants, for they are grown for ornament, and that consists in the full development of the fronds.

The position and climate have an influence in a certain degree on the well-doing of the Ferns, as they do better in some parts of the country than in others; but, generally speaking, there are sorts adapted for almost every part, and there are few places where a fernery might not be established and the Ferns made to flourish. As far as I have seen the cause of failure to do so may be traced more to the management than to anything else.

Unless on a large scale, it is not advisable to attempt to grow Ferns alone, but to associate them with American trailing, and alpine plants; and although the Ferns may form the principal feature, yet the addition of other plants will give the fernery a more interesting character. Where it is desired to make a small fernery, it will be well to exclude the larger and coarser kinds, such as the Male Fern (*Lastrea Filix-mas*), and Lady Fern (*Athyrium Filix-femina*), although there are more diminutive varieties of both that may be advantageously introduced. *Lastrea cristata* and *dilatata*, and *Polystichum aculeatum* it would be as well to leave out, although the latter forms a noble plant; but *Polystichum angulare* and *lobatum*, with their varieties, look as well and do not grow so large. Any of the varieties of Hart's-tongue (*Scolopendrium*) may be well introduced, also several varieties of *Polypodium*, such as *dryopteris*, *phlegopteris*, *calcareum*, *cambricum*, and *vulgaris*, the two latter being evergreen, the others dying down in the autumn. The Scaly Hart's-tongue, *Ceterach officinarum*, make a very pretty Fern when it does well, which it will do if not interfered with by other plants, and is planted in sandy peat and has plenty of room. *Aspleniums Trichomanes viridis*, *ruta-muraria*, *septentrionale*, *alternifolium*, and *fontanum*, are all of very diminutive habit, but make pretty little tufts when they thrive, which is not always the case, as I have known them fail to do so very frequently. They should have a good depth of sandy peat and loam, be well drained, and have plenty of room, so as not to be overgrown by other plants. They ought to be in a rather shady spot, but not under the drip of trees, and if a bell-glass be put over them in the winter they will be all the better.

Asplenium marinum and *lanceolatum* grow rather larger and sometimes do well; they may be more elevated but sheltered. *Allosorus crispus*, the Parsley Fern, makes a beautiful little tuft, but it is sometimes apt to die off unaccountably, and will be better for a little shelter in winter to protect the crown from excessive wet. *Blechnum spicant* and its varieties are very hardy and will stand any rough weather, and they sometimes make fine patches. They require a good depth of soil and may be planted low down. The Maidenhair Fern, *Adiantum capillus-Veneris*, succeeds tolerably well. *Adiantum pedatum* is also hardy to a certain extent, and is a beautiful Fern, but it dies down in winter. *Asplenium Adiantum nigrum* makes a very pretty plant, always retaining a certain freshness, and is very hardy. *Woodsia hyperborea* is a pretty little Fern, but requires protection from rain in winter. All these Ferns, and several others that I cannot call to mind just now, may be grown successfully in a small outdoor fernery; but let there be no stint of good porous soil; let each plant have plenty of room, be shaded but not covered, and have plenty of moisture in spring and summer, with good drainage. The crowns of most of them will be better if a little elevated, but not too much, as some persons are in the habit of carrying this point to the extreme.

There are several hardy Ferns which are well worth a place if room can be spared. What I have named may be grown in a very small space; but on a rather larger scale such as the following may be introduced, being larger in habit than most of the above, but less so than the Male or Female Ferns. The Ostrich Fern, *Struthiopteris germanica* and *S. pennsylvanica* are handsome species, coming up rather earlier than more strictly native Ferns, and dying down earlier. *Onoclea sensibilis* has creeping roots, which render it difficult to keep it in its proper place, but it may be surrounded with slates, which will have that effect. The same may be said of *Lastrea thelypteris*; these both require extra moisture, and may be planted near the ground line. *Lastrea rigida* makes a very handsome Fern, but where it grows freely it becomes too large for a small fernery. The same may be said of *Osmunda regalis*, although the roots may be kept within certain limits, which will prevent the plant growing too large. They require plenty of moisture. *Cystopteris alpina*, *fragilis*, and *montana* are suitable for a small fernery, and should have been mentioned in connection with *Polypodiums*.

Hymenophyllum tunbridgeense and *Wilsoni* may sometimes be seen doing very well out of doors when protected with a bell-glass, but I cannot say that I ever saw them in such a satisfactory state as I should like; however, I once saw a mass of the former in splendid condition in a small greenhouse, where no fire heat was ever applied, it having stood all the frost that ever entered there. I have grown both these and the *Trichomanes* very fine under a bell-glass in a greenhouse. The bell-glass seems necessary for the latter, and for both when grown out of doors. They grow well in equal portions of silver sand and peat, with plenty of pieces of sandstone broken up and intermixed.—F. C.

SPRAYING AND SPRAYERS.

For distributing liquid insecticides economically and effectively no method is equal to that of the spray. By a suitable appliance the liquid is broken up into myriads of minute globules, which rest like dew on plants and their pests alike. In this form it acts more powerfully against many parasites than if five or ten times the quantity were applied with the ordinary syringe, most of it to run off and be wasted on the ground, if nothing worse, or on the soil of plants in pots.

Various forms of excellent spraying apparatus are in use fixed on wheels and moved by hand or horse power according to circumstances. There are also, as numbers of persons know to their satisfaction, the handy and serviceable knapsack sprayers, as well as small pumps fixed in pails. All have their appropriate uses; but few, if any of them, meet the circumstances of numbers of persons in comparatively small private gardens. True, small hand sprayers have been invented, some of them very diminutive; but all the same a thoroughly sound,



Fig. 114.

durable, and efficient appliance, to be used like a syringe, has long been required by amateurs and gardeners alike.

Calling at the South-Eastern Agricultural College at Wye a few weeks ago we found Professor Percival in a jubilant mood. With a shout of Eureka he lured us into his garden. It was thought perhaps he had discovered another new fungus or eelworm which he was going to display under a forty-thousand power microscope, or something of that kind; but it was something very different, visible to the naked eye, tangible and substantial.

Taking a syringe out of a pail of water we were the next moment enveloped in a cloud of mist. Nothing cared he for hats or clothes, and another mist was produced, with the comforting assurance amidst the drizzle, "Oh, never mind, it won't hurt you; did you ever see a more beautiful spray? I tell you it's the best thing I have found, and all complete for nine and six; here, take it, try it, examine it inside and out." This was done, and to the question, "Did you ever see anything better?" we were constrained to reply, "No, never; but where did you find it?" The answer was "Good; you have not come to Wye for nothing. I had it from Mr. White of Paddock Wood, the great Hop and fruit grower; he uses bigger things himself and has invented this for everybody. Eureka." Exit Professor Percival.

Messrs. E. A. White & Co., Ltd., have in their own interests been making experiments for a long time with the object of abolishing insects. As a result they used with much success and distributed a Hop and fruit tree preparation called "Spimo." This we had tried last year. It cleansed fruit trees of aphides of all kinds that infested them, killing most of them at a touch, checked mildew, crippled red spider, and when applied with a brush cleared away American blight. The verdict of the operator was, "Excellent stuff for orchards, but not over-pleasant to use, or suitable for greenhouse work, as apart from the smell it affects the paint."

The drawbacks referred to have now been abolished, while insects are equally abolished by another preparation, and because of this it has been shortly named "Abol," as presumably signifying abolisher. This we have now under trial, and can testify that it is not in the least unpleasant to use, in fact the operator washed his hands in it as in soapy water, which the mixture resembles at one to two parts to 100 parts water, and went forthwith to dinner.

The mixture left no stain on white greenhouse paint, or on leaf or flower; indeed, it left nothing behind it but dead insects. All that were reached were killed, even the persistent *Aphis mali* and its attendant—ants. Swarms of caterpillars of the small ermine moth quickly succumbed, but their web protector sheltered them from the spray, and the syringe nozzle had to be used to break the nets.

Similar remarks apply to the American blight; when the "wool" was broken through they were dead in a moment. Neither thrips nor red spider could be discovered, but all insects that could be found were abolished. The roots of tender seedlings to which it was applied were not injured. "Queer stuff," remarked the operator, "it seems to know what it ought not to hurt as well as what we want to kill."

The small measure sent with each tin is handy. One measure to a gallon of rain water brings a lather, but quite half as much more is requisite for making hard water soft and bringing the requisite lather, which seems to be the test for insect-killing strength. The solution was passed, with the exceptions stated, through the

spray nozzle of the Abol syringe, and a little seemed to go a very long way.

A word about this appliance. It is brass, strong, and well finished, with a drip protector on the barrel and a screw-like plug in the nozzle, with two spiral grooves cut across the "worms" of the screw. The outlets of the grooves are opposite each other at the nozzle, and there occurs what may be called a fight of insect-poisoning water, for the two whirling streams come into violent contact, and are cut up into molecules innumerable, and hence the spray, finer and more abundant than shown in fig. 114.

There seems no chance of the metal plug water-divider getting out of order, and we found no clogging. If a strong single jet is wanted take out the plug; if several small straight jets are desired put on the side nozzle; but the plug is the thing for a spray and making the most of the liquid.

For spraying the under sides of leaves of plants near the ground, fruit bushes, Roses, or the lower parts of espalier or wall trees unscrew the nozzle, put on the head A A, fig. 115, and finish as shown, and you may soon have plants, branches, or bushes, as if enveloped in a cloud of smoke by the fineness and number of the liquid particles; these are blown about by the wind, and the spraying is consequently best done on a still day.

We draw attention to this useful, not to say necessary, garden appliance, because we believe it to be good, and we shall be a little surprised if it does not in time to come be regarded as a staple requisite by gardeners and amateurs over the length and breadth of the land.

If Messrs. White can succeed in producing a complete red spider and mildew abolisher—an Abol No. 2, equally handy and pleasant to use as Abol No. 1, "Spimo" can be

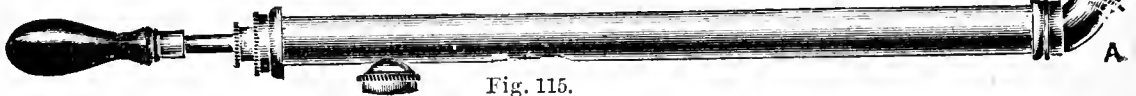


Fig. 115.

relegated to Hop gardens or orchards, and there possibly end its days. It is said that the Paddock Wood firm uses 1,000,000 gallons of insecticides yearly in its extensive plantations, so the managers are not without experience in the matter, or lacking in opportunities for experimentation.

PRUNING EARLY PEACH TREES.

As soon as the fruit is taken from the early trees careful cultivators will lose no time in removing all the fruiting wood that can be spared, thus allowing the reserved shoot for fruiting next season ample air and light. There are times when it is advisable to leave a little of this wood in. For instance, where there is a thin place in the tree, and the wood that has fruited has some good fruit spurs upon it, the retention of these prevents a bare spot, and though these spurs are not liked by the very orthodox Peach and Nectarine growers, the fact remains that on some of the early kinds that are very much addicted to bud dropping these spurs will often carry their fruit to perfection when the buds drop in other parts of the tree.

Though I am far from advising a system of late growth for this class of Peaches, there are times when a little additional growth is necessary, for it must not be forgotten that these open their buds at the same time as later kinds in the same house. It is in the time of laying on the flesh that they get the advantage, so a week or two longer growth after the fruit is gathered is a help rather than not. Over-ripening is a bad thing, of course, but there is such a thing as a check to growth, and those who blame over-ripening for bud dropping in every case should note how often the upper parts of the trees, where nearest the glass, and therefore the best ripened portion, are often the only parts that carry a crop.—H.

DRIBLETS FROM DUBLIN.

A NEW AGRICULTURAL SCHOOL.

AFTER the lapse of nearly fifty years the wish of the late Mr. Thomas Downpatrick is verging towards realisation, that an agricultural school should be erected and maintained at his expense in the parish of Down. The new institution is to be called "The Ulster Agricultural and Dairy School and Henry Trust," and it is the first building of its kind in the northern province. As the usual legal formality is now completed, it only awaits the sanction, or rather the signature of the Lord Chancellor. Lord Dunleath, William Johnston, Esq., M.P., and John Tate, Esq., J.P., are the Trustees selected to manage the institution, and Mr. John R. McConnell is the appointed Secretary.

THE ROYAL HORTICULTURAL SOCIETY OF IRELAND.

The usual monthly meeting of the Council of the Horticultural Society was held on Tuesday afternoon, the 13th inst., at the offices, 61, Dawson

Street, Major Domville, J.P., in the chair. After the minutes of the last meeting were read and signed, the principal item of the business to be considered by the Council was the settling of the final arrangements for the forthcoming summer show; after a short discussion the pending difficulties were completely settled. The Secretary (W. H. Hillyard) submitted a list of proposed names for election as members of the Society, which was passed. The meeting was brought to a close shortly afterwards.

DUBLIN WEATHER.

A month or two ago fine weather was the popular cry, to-day the topical shout is rain, and an amble around the country shows unmistakably why the gardeners are so vehement in their outcry; drooping plants, stunted growth, and a never ceasing run to the fountain for water. But the change that has occurred seems to say that their plaint is heard, and instead of a bright sunshine we get an occasional dark cloud and a short shower, but the spell is too brief to have an appreciable effect, it scarcely moistens the leaves. Owing to the tropical heat farmers are now able to send in a large consignment of the homely tuber.—A. O'NEILL.

GRAND YORKSHIRE GALA.

THE forty-first annual exhibition took place in the Bootham Field, York, on Wednesday, June 14th. and the two following days, and was again a pronounced success, both as regards the number and the quality of the exhibits. As is now the case at all the leading exhibitions, the trade contributed very largely to the show, and the splendid collection of Acers and other hardy plants, and the Clematis and Carnations in the entrance tent were great centres of attraction.

The arrangements in connection with the staging of the plants, groups, and also the allotting of the exhibits, so as to give the whole of the tents a finished and artistic appearance, were most commendable, and very much in advance of anything previously seen at the former excellent shows at York. The Orchids, of which there was a very beautiful collection staged, were arranged down one side of the centre stage of a lofty tent, and the groups of ornamental foliaged plants for effect were placed to back up to the Orchids, and so a two-fold advantage was gained—namely, the Orchids had a charming background; and the large Palms and Tree Ferns in the groups were so arranged that they were seen to the greatest advantage. Perhaps mention might be made to support the suggestion about the ventilation of the tents, that in the middle of the day the great sun heat, combined with the powerful scents of the flowers, made the atmosphere, to ladies especially, overpowering.

On entering the field the visitors passed into a spacious tent devoted to trade exhibits, and here were staged the groups of Messrs. Fisher, Son, and Sibray. This exhibit was composed of a charming bank of hardy hybrid Rhododendrons just in their beauty, followed by a tastefully arranged group of Acers, Tree Ivies, Cornus, Vitis Coignetia, and other hardy ornamental foliaged plants. From the same firm came well coloured Crotons, and also good forms of Cattleya Mossiae and Cypripediums. This collection had a frontage of 30 yards. Next came a group of new Clematis from Messrs. Jackman & Son of Woking, and very charming they were, being quite distinct, both in the growth and flower, from the older type of Jackmanni. The most noticeable were Duchess of Albany, a charming rose-coloured variety; Sir Trevor Lawrence, bright cherry red; Countess of Onslow, Grace Darling, and Duchess of York. As they are said to be quite hardy, they will, no doubt, prove an excellent addition to the Clematis family. In the same tent Messrs. Cutbush & Son of Highgate staged a fine group of Malmaison Carnations in variety, and in the centre they had plants of Calla Elliottiana in full flower, which was greatly admired. The same firm also provided a new attraction to this show by their exhibit of clipped Yews and Box trees.

Messrs. R. Smith & Son of Worcester sent a large collection of cut herbaceous flowers and Clematis, backed up with Bamboos and other graceful plants. Messrs. Clibran & Son of Altrincham staged at the end of the Orchid and group tent a beautiful exhibit of herbaceous Calceolarias of a very dwarf type, and most freely flowered. From Langport to York is rather a far cry, and still one of the most effective collections of cut flowers was staged by Messrs. Kelway & Son of that place. The Pæonies, Gaillardias, and Pyrethrums were fine. Especially noticeable among Pæonies were Langport Queen, Princess May, Olivia Lyde, Mrs. Gwyn Lewis, and Lady Gwendolin Cecil. Mr. John Forbes of Hawick, N.B., contributed some very pleasing examples of Phloxes and Pentstemons; new varieties being Lady Brodie, a rich deep rose; Earl of Annesley, and Sir Trevor Lawrence. Messrs. J. Hill & Son of Edmonton staged a choice collection of exotic Ferns, and it was most restful for the eye to meet the cool shades of green after the glare of bloom by which the group was surrounded.

Messrs. Walshaw & Son of Scarborough staged a small group of Cannas, which contained some of the most beautiful varieties. Messrs. Dickson, Ltd., Chester, showed a group of their new Carnation Duchess Consuelo, a good clear yellow variety that is free flowering. Messrs. Laxton Bros., Bedford, exhibited fruiting plants of their Strawberries Leader and Fillbasket. All the plants were bearing well. The unique Edwardian ware from Sherwood, Nottingham, was represented by two exhibits of prettily arranged devices.

The groups were, as usual, very excellent, and first honours were again secured by Mr. C. Mee of Nottingham, whose group was a very bold arrangement, well carried out. It contained first class specimens of many

Crotons and nicely arranged Orchids. Mrs. Gurney-Pease, Darlington (gardener, Mr. J. McIntyre), was second, staging a fine group with most beautiful Orchids, but lacking the scope and finish of the first; third, Mr. W. Vause, Leamington; fourth, Messrs. Simpson & Son, Selby.

PLANTS IN POTS.

For twelve stove and greenhouse plants (Orchids excluded).—First, Mr. James Cypher, Cheltenham, who showed very excellent specimens, and was easily first; there were grand plants of Azalea Souvenir de Prince Albert, Aphelexis macrantha, Clerodendron Balfourianum, Erica ventricosa magnifica, and Cavendishiana; second, Mr. W. Vause; third, Messrs. R. Simpson & Son, who staged a grand plant of Ixora Morsei covered with bloom. Six stove or greenhouse plants.—Mr. James Cypher was again first, staging beautiful examples of Erica ventricosa alba and Bothwelliana; second, Mr. W. Vause; and third, Messrs. R. Simpson and Son. For three stove or greenhouse plants.—First, Mr. James Cypher, Cheltenham, with good Ixora javanica and Bougainvillea Sanderiana; and third, Mr. W. Vause. For a single specimen stove plant.—First, Mr. C. J. Mee, with Anthurium Scherzerianum; second, H. H. Broadley, Esq.; and third, Mrs. Gurney Pease. For a single specimen greenhouse plant in bloom.—First, Mr. James Cypher, with Aphelexis macrantha rosea; and second, H. H. Broadley, Esq.

For six ornamental fine-foliaged or variegated plants, to include two Crotons.—First, Mr. Jas. Cypher; second, Mr. W. Vause; and third, Messrs. R. Simpson & Son. Three ornamental foliage plants.—First, H. H. Broadley, Esq.; second, Mrs. Gurney Pease; and third, R. Simpson and Sons. Single specimen Azalea.—First, Mr. Jas. Cypher, who staged a beautiful plant of Holfordiana. Three Crotons, distinct.—First, R. Simpson & Son, with grand plants of Montfortiensis, Warreni and Johannis; second, Mrs. Gurney Pease; and third, E. B. Faber, Esq., Harrogate. Single specimen Croton.—First, Messrs. R. Simpson and Son. Six Coleus.—First, Rev. H. E. Bishop, Clifton, York; and second, Mrs. Maulesley. For twenty alpine and herbaceous plants.—First, Mr. S. Hardcastle, York; and second, Mr. E. W. Pannett.

In the class for six exotic Ferns.—First, Messrs. R. Simpson & Son. Single specimen exotic Fern.—First, Rev. J. Yeats, Heworth, showing a fine Adiantum Farleyense. Six hardy Ferns.—First, Mr. T. Nicholson, York; second, Mr. J. Jackson, York. Ten hardy Ferns.—First, Mr. T. Nicholson, York; second, Messrs. R. Simpson & Son.

Carnations were not in large numbers, but some good flowers were seen. For a group of Carnations in bloom, not less than 5-inch pot, other foliage plants allowed.—First, A. Wilson, Esq., Tranby Croft (gardener, Mr. Leadbetter), a very good collection, nicely arranged, and containing well-flowered plants in grand health; second, Messrs. Laing & Mather, Kelso; third, Lord Barnard, Raby Castle (gardener, Mr. Tullett). For eight table plants.—First, W. Bateman, Esq., Pannal; second, Sir J. W. Pease, Bt.; and third, Mrs. Gurney Pease.

For a group of Gloxinias in bloom for effect, 6 feet by 4 feet 6 inches.—First, Mr. J. J. Upton, Manchester, whose group was composed of very strong healthy plants, covered with flowers of a bold type; second, J. T. Hingston, Esq., York (gardener, Mr. R. McIntosh); and third, R. Lawson, Esq., York. Eight Gloxinias in bloom.—First, Mr. J. J. Upton; and second, Donald S. Mackay, Esq., York.

Roses were not so good as usual, but no doubt the absence of rain will account for the lack both of quality and quantity. For a collection of Roses in pots in bloom, grouped, other decorative plants allowed.—First, Messrs. W. Jackson & Co., Bedale; and second, Mr. H. Pybus, Monkton Moor, Ripon. Nine distinct varieties of Roses in pots.—First, Mr. H. Pybus, and second Messrs. W. Jackson & Co.

ORCHIDS.

For a table of Orchids, 10 feet by 4 feet, cut blooms allowed.—First, Mr. Jas. Cypher, whose group was beautifully arranged, and contained charming Cattleyas, Odontoglossums vexillarium and crispum, and Cypripediums, the whole making a most effective display; second, Mr. John Robson, Altrincham. Ten Orchids in bloom.—First, Mr. Jas. Cypher, who staged fine examples of Cattleya Mossiae, Odontoglossum crispum, Lælia purpurata, L. grandis tenebrosa, and L. purpurata alba among others; second, Mr. John Robson; and third, W. P. Burkinshaw, Esq., Hessle (gardener, Mr. J. T. Barker). Three Orchids in bloom.—First, W. P. Burkinshaw, Esq.; and third, H. H. Broadley, Esq. Six Orchids in bloom, new or rare.—First, T. Statter, Esq., Stand Hall; second, W. P. Burkinshaw, Esq.; and third, W. Bateman, Esq., Pannal. Single specimen Orchid in bloom.—First, Mrs. Tetley, Weetwood, Leeds (gardener, Mr. L. Eastwood), who staged a well flowered plant of Aerides Fieldingi; second, H. H. Broadley, Esq. Three Orchids in bloom, new or rare.—First, W. P. Burkinshaw, Esq.; second, T. Statter, Esq., Stand Hall. Four Orchids in bloom, distinct, amateur or gentlemen's gardeners.—First, W. P. Burkinshaw, Esq., who had Cattleya Mendeli and Cypripedium Ashburtoniae giganteum very fine.

PELARGONIUMS AND BEGONIAS.

The Yorkshire Gala without its Pelargoniums would be quite out of character; and this year no one could complain as to the beautiful display in this section. The plants almost completely filled the centre stage of a large marquee, and, as in previous years, the keenest struggle for chief honours was between the two veteran exhibitors, Mrs. Tetley, Weetwood, Leeds (gardener, Mr. Eastwood); and J. T. Hingston, Esq., York (gardener, Mr. McIntosh). In the class for twelve Show Pelargoniums, J. T. Hingston, Esq. (gardener, Mr. McIntosh), was placed first, and they were indeed a beautiful dozen. Arranged in a bank at the entrance to the tent, they were the admiration of everyone; second, Mrs. Tetley (gardener, Mr. Eastwood). For six Show Pelargoniums, Mr. Eastwood was placed

first, and Mr. McIntosh second. Three Show.—First, J. T. Hingston, Esq.; second, Mrs. Tetley. Group of not less than eight Fancy Pelargoniums.—First, Mrs. Tetley.

For twelve Zonal, Nosegay, or Hybrid Nosegay.—First, Mrs. Tetley, showing a beautiful collection; second, Mr. H. Pybus. Six Zonal, Nosegay, or Hybrid Nosegay.—First, Mrs. Tetley; second, Mr. H. Pybus. Three Zonal.—First, Mrs. Tetley. Included in this exhibit was a finely bloomed plant of Ellen Clarke. Nine double flowered Pelargoniums.—First, Mrs. Tetley; second, Messrs. R. Simpson & Son. Three double flowered Pelargoniums.—First, Messrs. R. Simpson & Son; second, Mr. J. W. Clark, Clifton. Six double Ivy-leaved.—First, Mrs. Tetley; second, Mr. H. Pybus. Three double Ivy-leaved.—Second, Mrs. Tetley.

For a group of Tuberous Begonias, with foliage plants or Ferns for effect.—First, Miss Wharton, Burton Grange, York; second, J. Bellerby, Esq., York. Group of Calceolarias.—First, J. T. Hingston, Esq.; second, Mrs. Lloyd, Lincroft, York. Eight Calceolarias, open.—First, J. T. Hingston, Esq.; second, A. Wilson, Esq. Four Calceolarias.—First, J. T. Hingston, Esq.; second, G. Potter Kirby, Esq. Six Fuchsias in flower, distinct.—First, no name; second, J. T. Hingston, Esq. Three Fuchsias.—First, no name; second, J. Bellerby, Esq. Six Liliun Harrisii.—First, A. Wilson, Esq.; second, Mrs. Tetley.

CUT FLOWERS.

Cut flowers were not up to the usual standard. For twelve Roses, single blooms, thirty-six varieties or more.—First, Mr. W. Hutchinson, Kirby Moorside, who staged Helen Keller, John Bright, C. Testout, Général Jacqueminot, Mrs. J. Laing, Madame G. Luizet, and others. Second, Messrs. J. & A. May, Bedale; and third, Mr. Geo. Mount, Canterbury. Forty-eight distinct Rose blooms.—First, Mr. Geo. Mount with Marie Verdier, Mrs. John Laing, Prince Arthur, Capt. Hayward, and Ulrich Brunner. Second, Messrs. J. & A. May. Thirty-six blooms.—First, Mr. Geo. Mount; second, Messrs. J. & A. May, Bedale. Twenty-four Roses.—First, no name; second, Mr. Geo. Mount. Eighteen blooms.—First, Mr. W. Hutchinson; second, Mr. J. Hulme, York. Twelve blooms.—First, Mr. W. Hutchinson.

Twelve bunches stove and greenhouse cut flowers (open).—First, Sir J. W. Pease, Bt.; second, J. C. Waterhouse, Esq., Macclesfield. Twelve bunches stove and greenhouse (Orchids excluded).—First, J. D. Ellis, Esq., Worksop; second, Geo. Whitehead, Esq., Deighton Grove. Twelve bunches hardy perennials.—First, J. Burrell & Co., Cambridge; second, Sir J. W. Pease, Bt. Collection of hardy cut flowers, 18 feet by 4 feet (open).—First, Messrs. Harkness & Son, Bedale, who showed a fine collection, including Liliun Harrisii, Pyrethrums, Papavers, and Geums. Second, Messrs. R. Smith & Co., Worcester.

For forty-eight Fancy Pansies.—First, Mr. Jno. Smellie, Busby, Glasgow. Twenty-four Fancy.—First, Mr. J. Smellie. Twenty-four Show.—First, Mr. John Smellie; and second, Mr. Isaac Ramsden.

FRUIT.

For a decorated table of fruit, 10 feet by 4 feet 6 inches, not to exceed fourteen dishes, not less than ten dishes and not more than two distinct varieties of a kind.—First, Sir J. W. Pease, Bart. (gardener, Mr. McIndoe). The arrangement was charming, the only flowers used being *Oncidium flexuosum* interspersed with sprays of *Heuchera sanguinea*. The quality of the fruit was excellent. The judging was by points, and out of a possible 128 points this exhibit gained 114. The exhibit included Royal Sovereign Strawberry, Brown Turkey Fig, Grosse Mignonne Peach, Best of All Melon, Foster's Seedling and Black Hamburg Grapes. Second, Earl of Harrington, Elvaston Castle (gardener, Mr. Goodacre). The quality of the fruit was good, and the flowers comprised sprays of *Odontoglossum*. A beautiful dish of Royal Sovereign Strawberry was noticed, and good Black Hamburg Grapes.

Collection of fruit, six varieties.—First, Sir J. W. Pease, Bart., with Early Rivers Nectarine, Scarlet Premier Melon, Brown Turkey Fig, three bunches Black Hamburg, three Foster's Seedling Grapes, and Grosse Mignonne Peach. Second, Lord Barnard, Raby Castle (gardener, Mr. Tullett). Four dishes fruit.—First, W. Sheepshanks, Esq., Winsley Hurst, Ripley (gardener, Mr. A. Large); second, Sir J. W. Pease, Bart.; and third, Earl of Lonsborough.

Three bunches of Black Hamburg Grapes.—First, Earl of Lonsborough, Market Weighton (gardener Mr. McPherson); second, F. B. Grotrian, Esq., Ingmanthorpe, Wetherby (gardener Mr. Murchison). Three White Grapes.—First, F. B. Grotrian, Esq., with excellent examples of Buckland Sweetwater; second, Lady Beaumont; third, Lord St. Oswald. Six Peaches.—First, Jno. Edmonds, Esq.; second, Earl of Harrington; third, J. D. Ellis, Esq. Six Nectarines.—First, Jno. Edmonds, Esq.; second, Earl of Harrington. Scarlet-fleshed Melon.—First, Viscount Rawcliffe, Blankney, Lincoln (gardener Mr. Gurney); second, W. Sheepshanks, Esq. Green-fleshed Melon.—First, Sir J. W. Pease, Bart., M.P.; second, W. H. Bathe Wrightson, Esq., Cusworth, Doncaster. White-fleshed Melon.—First, Earl of Harrington; second, Mrs. Gurney Pease, Darlington. Six Figs.—First, Lord Barnard; second, Earl of Feversham. Dish of Cherries.—First, Sir J. W. Pease, Bart., M.P. Dish of Strawberries.—First, J. D. Ellis, Esq.; second, H. Thelluson, Esq.; third, Sir J. W. Pease, Bart., M.P. Twelve Tomatoes.—First, Lady Beaumont; second Miss Webb, Newstead Abbey, Notts; third, Col. Thorpe, Coddington Hall, Newark.

THE HORTICULTURAL COLLEGE, SWANLEY.—We are informed that the Rose garden, which has been laid out under the superintendence of the Very Rev. the Dean of Rochester, will be opened by the Viscountess Falmouth on the 29th inst., at 3 P.M. Dean Hole has promised to attend.

EUTOCA VISCIDA.

THIS is the name of the plant of which "H. R. B." sends us specimens. It is a charming annual of dwarf growth, and is adapted for small beds or near the margins of borders, as otherwise the plants appear to little advantage crowded with the taller, stronger growing perennials. The Eutocas are not particular as to soil, any moderately light ordinary garden soil suiting them, and perhaps the best way to obtain plants in good condition is to sow the seeds in the borders in the autumn. The flowers (fig. 116) have very rich blue corollas, with a circular red blotch in the centre, and they are borne in curved racemes, several blooms being open at one time. The leaves are somewhat heart-shaped, but irregularly cut at the margin, and the surface of the plant generally is covered with hairs, the points of which each bear a viscid secretion, and



FIG. 116.—EUTOCA VISCIDA.

to this character it owes its specific name. The bright blue tint is very pleasing, and the flowers, moreover, last a considerable time if cut with a good length of stem and placed in water, thus rendering them valuable for vases.

BUTLEY TULIP SOCIETY.

THE seventy-fourth annual exhibition of this old time Society was held at the Orange Tree Inn, Butley, near Macclesfield, on Friday, June 9th, and although the flowers were of excellent quality, yet there was a note of sadness apparent among the small body of growers present as they thought of the days gone by and of the men who used to meet them in this pleasant Cheshire country, now, alas! gone into the silent land.

But as the Irishman said, "We must live while we can," and it is encouraging to say that although exhibitors were few, yet the flowers were of very high quality, and on the whole were better than those exhibited at the National Show at Manchester on June 2nd. Feathered flowers were exceptionally well shown. Bertha, Coningsby, Bessie and Mr. Hepworth, bybloemens; Wm. Wilson, Rifleman, Wm. Annibal, Jas. McIntosh, and Typo, bizarres; Mrs. Atkin, Heroine, Miss Edwards, and Lizzie, roses, were almost perfect. Flamed flowers, although good, were not quite up to the average, and the breeders showed signs of the ungenial spring in many cases. The only novelty of any note was a feathered bybloemen heavily feathered with purple on an exquisitely pure white ground, called "Jack," a seedling of Mr. Bentley's. The silver cup given by the President, Mr. C. W. Needham of Royton,

was awarded to Mr. J. W. Bentley, Kersal, Manchester, for the best stand of six rectified flowers. He showed Sir J. Paxton, flamed; Wm. Wilson, feathered; A. McGregor, flamed; Mrs. Atkin, feathered; Talisman, flamed; Conningsby, feathered. The following awards were also made by the Judges, Messrs. Housley (Stockport), and J. Woodhead (Staleybridge).

Premier feathered Tulip in the whole Show, Mr. Bentley with Bertha. Premier flamed Tulip, Mr. Bentley with Sir J. Paxton. Premier breeder Tulip, Mr. Bentley with Rose Hill.

Stands of Three Breeders.—First, Mr. Bentley with Goldfinder, Rose Hill, Agnes. Second, Mr. Needham with Lloyd's 208, Mabel, Beauty of Litchurch. Third, Mr. Buckley, with Sulphur, Mabel, Queen of the May.

Feathered Bizarres.

- 1 Mr. Bentley, with W. Wilson
- 2 Mr. Bentley, with Rifleman
- 3 Mr. Bentley, with W. Wilson
- 4 Mr. Needham, with W. Annibal
- 5 Mr. Bentley, with Lord Lilford
- 6 Mr. Needham, with J. McIntosh
- 7 Mr. Needham, with Typo
- 8 Mr. Bentley, with Magnum Bonum
- 9 Mr. Bentley with John Mills

Feathered Roses.

- 1 Mr. Needham, with Mrs. Atkin
- 2 Mr. Bentley, with Mrs. Atkin
- 3 Mr. Bentley, with Heroine
- 4 Mr. Bentley, with Miss Edwards
- 5 Mr. Needham, with Lizzie
- 6 Mr. Bentley, with Mrs. Collier
- 7 Mr. Bentley, with S. Headley
- 8 Mr. Bentley, with Sarah Ann
- 9 Mr. Bentley, with Kate Connor

Feathered Byblæmens.

- 1 Mr. Bentley, with Conningsby
- 2 Mr. Dymock, with Lady Denman
- 3 Mr. Bentley, with Bessie
- 4 Mr. Buckley, with Mrs. Hepworth
- 5 Mr. Bentley, with Jack
- 6 Mr. Bentley, with Mrs. Jackson
- 7 Mr. Bentley, with W. Parkinson
- 8 Mr. Bentley, with Sylvester
- 9 Mr. Bentley, with Bertha.

Bizarre Breeders.

- 1 Mr. Bentley with Sulphur
- 2 Mr. Bentley with R. Yates
- 3 Mr. Bentley with Thurstan's 121
- 4 Mr. Bentley with Lloyd's 103
- 5 Mr. Buckley with Lea's Seedling

Byblæmen Breeders.

- 1 Mr. Needham with Ashmole's Seedling
- 2 Mr. Bentley with Glory of Stakehill
- 3 Mr. Bentley with Alice Grey
- 4 Mr. Bentley with Seedling
- 5 Mr. Bentley with Leech's Seedling

Sels.—1 Mr. Bentley with Cygnet. 2 Mr. Bentley with Golden Beauty. —J. W. B.

THE YOUNG GARDENERS' DOMAIN.

EXHIBITION VEGETABLES.

A GOOD method of growing Peas, Dwarf and Runner Beans, and Broad Beans for exhibition is to prepare trenches in a similar way to those that are made for Celery. Take out a trench about 2 feet deep and 1½ foot wide, fill in with rich manure, place about 4 inches of soil on it and make the whole trench moderately firm by treading, which will bring it level with the surface. If Peas are sown make a point of having the best seeds obtainable, placing these 3 inches apart, Runner Beans 8 inches, Broad Beans 8 inches, and French Beans 6 inches asunder. Place sticks to those plants that require them in good time, and if the weather is dry, pour into the trenches about 4.30 P.M. a good supply of water that has been exposed to the sun; by no means use water from a spring or well, or mildew will soon put in an appearance.

When gathering the pods of Peas, great judgment should be exercised. They must be handled carefully, the bloom not rubbed off, and be full of luscious Peas, neither too old nor too young. If some of the pods on the rows are a little too early, they can be gathered quite eight days before the show and placed in saucers of wet sand, the stalk end only being inserted, and kept in a cool darkened cellar. Keen competition is generally evinced in the Pea classes, especially by amateurs; some cottagers also grow excellent pods and exhibit them at their local shows.

A well staged collection of vegetables is a treat to behold. If the show is in July and twelve distinct varieties are required, the following may be chosen—Potatoes, Cabbages, Cauliflowers, Vegetable Marrows, Peas, Beans, Onions, Turnips, Broad Beans, Cucumbers, Tomatoes, Carrots, and Lettuce, all in exact accordance with the stipulations. Tomatoes materially brighten a collection of vegetables. Parsley is the best greenery for garnishing. It should be freely used, but at the same time must not cover any of the vegetables, each of which should have room to show itself to advantage. I will deal with some of the principal kinds of vegetables in another communication with the Editor's permission.—FOREMAN X.

[It is readily granted, as our correspondent appears to be familiar with the subject of growing and showing vegetables.]



HARDY FRUIT GARDEN.

Summer Pruning Fruit Trees.—Summer pruning, if carried out on right lines, not merely shortening shoots at random because they have grown long, is beneficial to the trees operated upon. As usually understood, summer pruning is the shortening back of foreright or side shoots on restricted fruit trees which have grown a considerable length from their original starting point. If allowed to remain unshortened the continued growth, especially if strong, abstracts sap which might be doing service in building up fruit buds at the base.

This is the object of summer pruning, and in the majority of cases it is attained, if the growths are shortened when the lower half-dozen leaves have attained full size. The shoots may then be pruned back to four or six leaves, according to their strength. With the strongest shoots four leaves will be ample to retain. Weaker growths shorten to six leaves. Where thickly placed it is a good plan to reduce the number of the summer shoots, cutting out the weakest entirely. It is best to have a limited number of shoots to each clump of spurs, as the more light and air that can reach the basal leaves the better. Shortening, without taking the precaution to thin if necessary, creates a thicket of growth.

Another method of summer pruning is not to shorten any shoots or branches, but simply to thin out and regulate growth. The form of tree on which this style of pruning is found to act best is the open bush and standard. Thinning branches can be carried out as well in summer as winter. Cuts heal sooner, and there is the advantage of seeing to what extent it is necessary to remove growths.

The preceding remarks on summer pruning refer chiefly to Apples and Pears. The summer growths of Plums and Sweet Cherries are best pinched or shortened to three good leaves in dealing with trees or bushes restricted in form. Standards and half-standards need little pruning, especially if well trained when young.

Morello Cherries make abundance of wood in a season. This requires some thinning, regulating, and laying-in without any shortening, cutting out the bearing shoots of the present season as the fruit is gathered.

Gooseberries on walls must be summer pruned like Red and White Currants. The side shoots or foreright growths are shortened to three pairs of leaves. Bush Gooseberries may be thinned and regulated later on.

Black Currants require no shortening at the present time, but crowded shoots or branches may be removed after the fruit has been picked.

Watering Fruit Tree Borders.—The importance of maintaining the borders moist at the present time is very great. Trees on walls carrying good crops must not suffer from lack of moisture in the soil, for with this there is also absence of food for the roots. Heavy demands are made now upon the trees, for in addition to carrying and sustaining the crop there is extension and perfecting of growth for the succeeding season. It is a wise plan to check evaporation from the soil by a liberal mulching of manure over the roots immediately after a copious watering has been given. Further waterings may be given over the mulching, and liquid manure applied. A moist condition of the soil promotes and maintains a healthy condition of the foliage, which wards off attacks of red spider and aphids.

Borders with plenty of natural drainage and on light soils feel the effects of dry weather sooner than those on retentive ground. Where the surface of the border is smooth and caked it should be carefully pricked over with a fork, doing this without injuring the roots if many are situated near the surface.

Newly planted fruit trees on walls and in the open are not only benefited by liberally watering the roots, but by syringing to cleanse and maintain the foliage fresh.

Strawberries.—*Netting Fruit.*—Covering the beds with nets must be adopted immediately the first fruits begin to colour. Forked sticks can be driven down at intervals on each side of the beds, and cross pieces laid over on which the nets may be stretched, fastening them down at the sides to prevent birds passing underneath.

Feeding and Watering.—Healthy plants developing good crops may be fed freely with liquid manure while the fruit is green. Water should be given previously on light dry soils. Considerable nutriment is derived from a liberal mulching if the virtues contained in the manure are washed into the soil, so that the roots may appropriate the food. Feeding need not be continued after colouring commences.

Thinning the Fruit.—There is some advantage in reducing the number of fruits where a heavy crop has set. Many of the smallest and deformed may be cut out.

Early Propagating.—The runners from good fruiting plants may be layered when the first plantlet shows roots. These layers are choice, and may be employed when established for forming the first new bed or for growing as pot plants. The methods of rooting Strawberry layers are various, but for these early plants the best way is undoubtedly that of securing them on the surface of small pots filled with good loam and manure pressed down firmly. The soil must be kept moist, and the runners beyond the plantlets nipped off early.

FRUIT FORCING.

Melons.—Plants with the fruit ripening must have a plentiful supply of air, and water should be withheld from the fruit. If the plants are strong, and there is a disposition to crack, in addition to withholding water, cut the growths carrying the Melons half through, a few inches below the fruit. A dry atmosphere is essential, and a temperature of 70° to 75° artificially, falling about 5° at night. If the sun be powerful, place a slight shade of some kind directly over the fruit, so as to insure their ripening evenly and gradually. Water only to prevent flagging. A slight shade after a dull period is better than heavy waterings and a close vitiated atmosphere.

Fruit Swelling.—Add more soil to the ridges or hillocks. It should be warm, moderately heavy, rather moist, and pressed firmly. Water will be required about twice a week, regulating this according to the plants. Remove all fruit but three or four on a plant, also blossoms, and afford the needful supports. Stop or remove laterals, not great reductions, but little and often, not allowing them to interfere with the principal growths. Syringe twice daily. On bright mornings commence ventilating about seven o'clock, or at 75°, and increase it with the advancing sun, keeping through the day at 80° to 90° with bright sun. Close at 80° to 85°, increasing to 90° or more.

Plants Setting their Fruit.—The plants should have the foliage thin in disposal, so that air and light may have free access. The growths will then be stout and short-jointed, and the foliage thick in texture. The blossoms also will be proportionately strong. Ventilate a little constantly, and if dull have a little warmth in the pipes to cause a circulation of air, and when the heat falls below 65° at night, or 70° to 75° in the daytime. The soil must be sufficiently moist to prevent the leaves flagging, and only moderate moisture will be required in the atmosphere, damping in the morning and afternoon, but keep the water from the plants. Fertilise the blossoms about noon on fine days, and when several are expanded on a plant, stopping at one joint beyond the fruit to insure uniformity of swelling.

Young Plants.—Train with one shoot for trellises, and rub off the laterals up to the first wire, and then every alternate lateral on opposite sides afterwards, stopping the leading shoots when about two-thirds up the trellis. Flowers ought to appear on the laterals, if they do not show at the second joint stop at that. Plants for training over the bed should be stopped at the second leaf. Select four of the resulting shoots, training two to the back and two to the front of the frame or pit. Remove all others carefully, but if only two shoots result stop them at the second or third leaf, and make a selection of the best for training. Keep the stem clear for a space of about 6 inches from the collar. Remove every alternate lateral on the shoots, stopping these 12 to 15 inches from the sides of the frame. Let there be no deficiency of moisture at the roots, and add fresh soil to the hillocks as the roots protrude. Syringe at closing time, but avoid wetting the stems, as it may lead to canker, which should be kept under by rubbing quicklime into the affected parts until dry. Provide the necessary ventilation for insuring sturdy growth. Close early, and keep the growths well regulated not less frequently than once a week. Shade only to prevent flagging, it will only be necessary for an hour or two at midday under powerful sun.

Sowing for Late Fruit.—A last sowing should be made at once for planting in manure-heated pits and frames. Plants from this sowing will afford fruit at the latter part of September, and be useful if properly attended to. Those with light well-heated structures may continue to make sowings as required until the end of July. The plants from the last named sowing will continue the supply up to the beginning of November, after which the fruit is generally of very moderate quality.

Peaches and Nectarines.—*Early House.*—The fruit will shortly be all gathered, therefore admit all the air possible day and night. If the roof lights of the earliest forced house are movable, take them off after the trees have had full ventilation for a fortnight, and keep the trees free from insects by forcible syringings. Let the borders be duly watered, affording liquid manure to weakly trees, which helps them to plump the buds, and mulch with short manure. Cut away the wood which has borne fruit to the shoot at the base intended to bear fruit next season, unless such shoot is required for extension. If there be any superfluity of shoots remove them now; they only keep air and light from the principal foliage, and hinder cleansing operations. Keep laterals and any gross shoots closely stopped.

Houses with Fruit Ripening.—The trees must not be syringed, but moderate moisture should be maintained until the fruit is ripe; even when ripe an arid atmosphere should be avoided, as it is highly prejudicial to the foliage. Water must also be given liberally at the roots. Admit air abundantly. In gathering Peaches great care is necessary, as the least pressure makes a mark and spoils their appearance. A piece of wadding should be held in the hand, and the fruit removed by gentle pressure, then laid gently in a basket or tray. A cool and airy fruit room is the best place for Peaches and Nectarines after they are gathered.

Trees Swelling their Crops.—When the stoning is over the trees will endure strong heat without fear of the fruit falling. Afford tepid liquid manure to the roots of trees carrying full crops, and not otherwise too vigorous. Be careful in giving liquid manure to very vigorous trees, as it tends to over-luxuriance, and may interfere with setting and stoning in the succeeding year. Still, liberal treatment is necessary, such as light surface mulchings and copious waterings every week or ten days in well drained borders. Syringe twice a day to keep down red spider, ventilate early, keep the temperature through the day at 70° to 75°, 80° to 85° with sun, and close the house sufficiently early to increase to 90°. This, with

abundance of moisture in the house, will insure large fruit, and if ventilation is given before nightfall and increased early in the morning, all will be well; but if a close and moist atmosphere be maintained with high temperature the fruit, though large, will lack flavour. Keep the fruit with the apex to the light, laths across the trellis will admit of this being done, and clear away the leaves from the fruit, but do not remove them if it can be avoided. When approaching ripening cease syringing, admit air freely, and 60° to 65° at night will be sufficiently high temperature artificially in the daytime, unless it is wished to accelerate the ripening, when it should range from 70° to 75° with a rise from sun heat.

Late Houses.—Train the growths thinly, reserving a shoot at the base of the current year's bearing wood, and stop those on a level with or above the fruit at two or three leaves, and succeeding growths at a joint or two. Side shoots on extensions not required to form bearing wood, or for furnishing the trees, stop at an inch or two of growth to form spurs. Thin the fruit to a few more than will be required for the crop, retaining the largest and best placed. There should not be more than one fruit to each square foot of trellis covered by the trees, but a few more may be left to meet casualties in stoning. Syringe twice daily except on dull days. During the prevalence of dull weather an occasional syringing will be all that is required, as it does not answer to keep moisture hanging on the foliage. Water inside borders as necessary, and afford liquid manure to weakly trees. Mulch the borders lightly with short manure, and keep it moistened as it becomes dry.

THE BEE-KEEPER.

SHADING AND VENTILATION.

It is of importance that bees should have attention at the proper time, and the shading and ventilation of hives must not be neglected. The present spell of bright weather is so beneficial both to strong and weak stocks that close attention should be given to this subject. We prefer ventilating hives from underneath the brood nest, and where perforated zinc floors are in use these are often found to afford ample ventilation during the hottest days of summer. But from experiments made with them we are inclined to think bees winter better with solid wood floors, as zinc is very cold, and bees have a great aversion to walking over a cold surface in winter. However, many bee-keepers highly approve of zinc floors for their bees, as they allow a circulation of air at all times.

If the hives have loose floor boards ventilation is a very simple matter, as the body of the hive may be wedged up as much as is required. When this is done the full width of the hive the bees have ready access, and it will not be necessary for so many of the bees to be fanning at the entrance, as is always the case during the prevalence of hot weather if the entrance is not large enough. This is done by the bees to lower the temperature of the hive.

We do not recommend giving ventilation at the top of the hive, as this reduces the warmth where it is most required. Shading should then be resorted to, and this will often have the desired effect. It is also an advantage to shade stocks when the body of the hive is wedged up its full width, as during a spell of very bright weather bees will often swarm. This might have been prevented had shading and ventilation been resorted to in time, before the bees made preparations for swarming. Those who have not previously tried this plan will be surprised at their immunity from swarming.

COMB FOUNDATION.

The most important aid to success in bee-keeping is comb foundation. This fact is now pretty well known to the majority of bee-keepers. The genuine article is made from pure wax, which is rolled into sheets varying in thickness. Those intended for supers usually run about sixteen sheets to the pound, whereas those used for the brood chamber will be of double thickness.

It may be used in various ways, a narrow strip fastened to the top bar of the frame being sufficient to act as a guide; from this the bees will build straight combs. It is, however, a great saving of labour to the bees if full sheets of foundation are used, as much honey is consumed by the bees in making sufficient wax to fill an ordinary sized hive with comb. We prefer strips of guide comb for sections, as the midrib of the comb will be found to be much thinner when made by the bees than when foundation is used.

If the top bar of the frame is split the edge of the foundation may be placed in the opening, a wire nail will hold it in position, and if the hive is placed level nothing more will be necessary. A beginner should always use thick sheets of foundation, averaging about eight sheets to the pound. After some experience with these thin super foundation may be used in the brood chamber. In our own apiary we never have anything else. It is necessary, however, to use them between fully drawn out combs, otherwise they may break down.—AN ENGLISH BEE-KEEPER.



TO CORRESPONDENTS

•• All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Peach (*Ignoramus*).—We are sorry to say the fruit arrived in a smashed state, the result, mainly, of over-ripeness at the time of packing. Only a small portion was in something like a normal state, and the colour, also the glands on the leaves, were the same as those of Waterloo. If the flowers are large we suspect that is the name of the variety, but if they are small it is possibly Early Louise. Both are first early Peaches, the last named raised by Mr. Rivers, the other of American origin.

Moth (*Insect*).—The moth enclosed is familiarly called the Humming-bird Hawk (*Macroglossa stellatarum*), for it flies with a sonorous hum, and its movements suggest a comparison to the humming-birds of the tropics, though it lacks their lively colours. It has been seen nearly every month of the year, but its chief seasons are spring and autumn, when it visits flowers both by day and night. The moth seems to pass the winter in a semi-torpid state, but is tempted out by gleams of sunshine. Eggs are deposited during spring; the caterpillars feed upon species of Bedstraw in July and August; they have a horn at the tail. There is but one yearly brood, and it is a species quite harmless in gardens.

Ashes of Rank Weeds (*T. A. C. C.*).—The ashes of rank weeds, such as thistles and nettles, are beneficial to cast over the garden, as they are rich in potash and other plant food, as per analysis by Dr. Emil Wolff subjoined:—

	Potash	Soda	Lime	Magnesia	Iron...	Phosphoric acid	Sulphuric acid	Silica	Chlorine	Thistles.	Nettles.
	31.16	48.00
	0.54	2.75
	47.13	20.08
	5.00	5.89
	2.29	3.14
	6.10	5.38
	3.32	6.13
	3.98	—
	0.62	9.98

If the weeds are reduced to ashes there is no possibility of their reproducing themselves again.

Unhealthy Vines (*Copley*).—We suspected there was something wrong with the roots. If there are abundance of fibres, as ought to be the case, in the narrow inside border encourage them by top-dressings and the judicious use of mild stimulants, remembering that excess is injurious. The outside border is probably sour, but may with care be renewed when you have a plenitude of roots in the house, without material check to the Vines. Phylloxera does not cause the fruit to crack without affecting the leaves. Both cracking and mildew are incited when the roots are defective either through sour soil or an excess or deficiency of water, with, at the same time, a too moist atmosphere and a fully too low night temperature. Do not over-crop, and never allow the house to get too hot before increased ventilation is given. We have known more than one crop of Grapes seriously damaged by mildew, the result of too late ventilation on Sunday mornings, and then throwing the ventilators widely open by thoughtless young men to "bring down" the temperature. We do not suggest this has occurred in your case, and we mention the facts as condemnatory of such practice, which is not quite extinct. The worse the Vines that have fallen to your charge the greater will be the credit due to you on their restoration.

Treatment of *Dendrobium nobile* (*Ignoramus*).—Your treatment so far has been quite correct, and you should now get all possible growth into the plant. Towards the end of the summer you will see that the growths are finished by the last leaf appearing on the top of the stems, and the latter rounding up, so to speak. At that time allow the plants full exposure to the sun, and a little more air than they have been used to. This will harden the growths—ripen them, as it is termed; and when the stems are quite finished, the plants may with advantage be placed in quite a cool and very light house to rest. You will find no difficulty in telling when the growth is finished for the season. The plant should be slowly introduced to more heat again in spring—not suddenly, or this may cause the flowering nodes to produce growth instead of flowers. Avoid watering too liberally at the roots until these are very active.

The Pear Tree Slug (*Fruit Foreman*).—The Pear leaves are attacked by the Pear tree slug, the larva of *Selandria æthiops*, known also as *Tenthredo adumbrata*. The slimy black slugs eat away the parenchyma of the leaf, as shown in the illustration (fig. 117), and are frequently very destructive to wall trees, bringing growth to a standstill and causing the fruit to drop. Miss Ormerod, in her "Manual of Injurious Insects and Methods of Prevention," says:—"The slug-worm attack can be checked by dusting or syringing. The caterpillars, if annoyed by throwing a caustic powder on them, such as quicklime or gas lime, can throw it off at first by exuding a coat of slime, and thus, as it were, moulting off the obnoxious matter; but they cannot keep on continuing this process; therefore a second application of the powder (of course soon after the first)



FIG. 117.—PEAR TREE SLUG.

takes effect and kills them. If a good time is allowed to elapse between the dressings, they will have regained the power to produce the slime exudation, and the dressing will do little good. Heavy syringings of the tree with strong soapsuds, applied by a powerful garden engine, are effective in getting rid of this pest. Tobacco water will destroy them; and lime water has also been found useful, in the proportion of a peck of lime to 30 gallons of water; it may be noted that if 2 lbs. of softsoap are added, it will improve the mixture."

Watering Young Trees (*N. B.*).—There are not many trees more difficult to establish than recently planted Scotch Firs, and the larger they are when removed the greater is their liability to succumb during dry weather in summer. We have seen them fail in hundreds, and even thousands, when there have been few losses among Larches and other kinds planted at the same time. Watering is certainly beneficial when done soon enough and in the proper manner, followed by mulching, and supplemented by syringing or spraying the trees. All this can be done when water is handy and the trees comparatively few. Daily sprinklings of the surface soil is labour wasted. The soil must be made thoroughly moist from the surface downwards, well below the roots. To effect this one, two, three, or more pails of water may be required for each tree, according to its size and the porosity or otherwise of the soil. When the soil is thus made moist it should be kept so as long as possible by mulching, or covering the surface, while still moist, 3 or 4 inches in thickness with manure, partially decayed leaves, short grass, or anything that can be applied to prevent evaporation; or if nothing of the kind can be done, by running the hoe through the surface on the morning following the evening watering, for breaking up the fissures which form by the shrinkage of the soil and through which the precious moisture escapes into the air. An inch or two of loose dust prevents this to a greater extent than many persons imagine. The supplementary syringing or spraying the trees is of great importance in preventing or checking evaporation from the leaves. So long as they are wet there is no escape of moisture from them; the longer they remain dry the greater is the loss, and when this exceeds the amount supplied by the roots the leaves shrivel and the trees suffer or die. We have known men constantly employed in syringing recently planted trees and shrubs in pleasure grounds during hot sunny days in early summer, and beyond doubt with great advantage, the roots at the same time being kept moist. We shall be glad if you can adapt some of the information we have endeavoured to impart to your own circumstances; but in the meantime you may have, as we hope, refreshing rain.

Abnormal Tulip (R. B.).—The specimen you send, though not unique, is unusual, and because it is interesting an illustration will be given in a future issue.

Mowing Lawns in Dry Weather—Machines Clogging (O. F.).—You ask "if it is a good plan to keep off the grass box of a mowing machine, particularly during such hot weather; or are the droppings of grass apt to clog mowing machines?" In mowing lawns when the grass is very dry, there is no more liability to clogging when the box is off than when it is attached to the machine. Except when the grass is very long, it is advantageous rather than otherwise to let the machine scatter the grass evenly on the lawn during dry hot weather in summer. We have not removed any grass from our lawn during the past three weeks, and it has been the same no doubt over hundreds of acres where machines have been run over the surface weekly. When machines clog in wet weather, it is an excellent plan after using them to turn them on their sides, and flush them out with hot water before putting them away. The working parts are then cleansed, dry immediately, do not rust, and are in good condition when wanted again.

Vine Leaves Warded (J. M.).—Both the Black Hamburgh and Gros Colman leaves are warded. This is mainly caused by a close, moist, and warm atmosphere, which retards evaporation, and causes an abnormal growth of tissue on the under side, with corresponding depressions on the upper surface of the leaves. The warts seriously interfere with the transpiration, and not infrequently the leaves become scorched, and the foliage in some cases falls prematurely. Otherwise the warding does not materially affect the health of the Vines, and they usually finish the crop well, other conditions being favourable. Of course it is best to avoid the abnormality by judicious ventilation, especially in the early part of the day; and it is necessary to be very careful in this matter after a dull period, as the leaves are then tender, and the more liable to receive a check by exposure to hot sun. In other respects the Vines, judging from the leaves, are in good condition. You have to remember that on a west aspect the sun has attained great power when it reaches the house, and you must act accordingly. We should leave the top ventilators slightly open all night, though they may be closed for a time after damping or syringing in the afternoon or evening, according to the weather.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. B.).—*Lamium maculatum aureum*. (J. M.).—1, *Ilex aquifolium* var. *scotica*; 2, cannot be positively identified, but very closely resembles some of the forms of *I. aquifolium* *Hodginsi*; 3, *I. aquifolium aurea marginata*. (Garden Boy).—A rather old boy, we suspect, judging by your letter, but all the same, you failed to see the correct editorial address prominently given at the head of the "Correspondents" page and elsewhere. Nor did you observe that we only undertake to name "species" (not varieties) of "cultivated" plants. If you do not know the difference, as many "boys" do not, you should try and learn. We have now to say that by the delay caused in sending the parcel to the wrong address, and not packing the specimens in soft green grass or damp moss, they arrived in such a shrivelled state as to be practically beyond identification. We can only say that 1 appears to be *Saxifraga ceratophylla*; 3, a *Fumaria*; 4, a *Salvia*, possibly *S. Heeri*. The Rose we suspect is the old Maiden's Blush. We would have named the specimens if they had arrived in a reasonably fresh state, though in the future you must be so good as to comply with the published conditions. (R. C. N.).—*Halesia tetraptera*, see page 509; *Genista hispanica*. (W. B. R.).—The flowers had fallen, but we are endeavouring to expand one bud for identification.

COVENT GARDEN MARKET.—JUNE 21ST.

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	1 0	2 0	Lettuce, doz. ...	1 3	0 0
Asparagus, per 100 ...	1 0	3 6	Mushrooms, lb. ...	0 6	1 0
Beans, per lb. ...	0 3	0 6	Mustard and Cress, punnet	0 2	0 0
Longpods, ½ bushel	1 6	2 0	Onions, bag, about 1 cwt.	5 6	0 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bunches	2 0	6 0
Cabbages, per tally ...	7 0	10 0	Peas, per bushel	5 0	6 0
Carrots, bunch ...	0 6	0 0	Potatoes, cwt. ...	2 0	6 0
Cauliflowers, doz. ...	4 0	6 0	new ...	9 0	11 6
Celery, new, per bundle	1 9	0 0	Shallots, lb. ...	0 3	0 0
Cucumbers ...	0 4	0 0	Spinach, per bushel	2 6	4 0
Endive, doz. ...	1 3	1 6	Tomatoes, lb. ...	0 4	0 6
Herbs, bunch ...	0 3	0 0	Turnips, bunch ...	0 3	0 4
Leeks, bunch ...	0 2	0 0	Vegetable Marrows, doz.	2 6	3 6

REMARKS.—Markets fair. Asparagus, arrival heavy; trade bad for medium samples.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per box ...	1 0	1 6	Melons ...	1 0	3 0
Apples, Tasmanian, per case ...	13 0	20 0	Nectarines, per doz. ...	6 0	12 0
Cherries, ½ sieve ...	6 0	10 0	Peaches, per doz. ...	3 0	15 0
Figs, green, per doz. ...	3 0	6 0	Pines, St. Michael's, each	3 0	8 0
Gooseberries, ½ sieve ...	2 9	0 0	Plums, per box ...	1 6	2 0
Grapes, black ...	1 0	3 0	Strawberries, hothouse, lb.	1 6	3 0
Lemons, case ...	14 0	36 0	outdoor, bskt.	2 0	3 0
			about 6 lbs. ...	2 0	3 0

REMARKS.—Markets good.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches ...	1 6	2 0	Lily of the Valley, 12 sprays	0 4	1 0
Arums ...	3 0	4 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch ...	2 0	2 6	Maidenhair Fern, doz.		
Azalea, white, doz. bnchs.	3 0	4 0	bnchs. ...	4 0	6 0
Carnations, 12 blooms ...	1 6	3 0	Mignonette, doz. bunches	4 0	6 0
Daffodils, single yellow, bch. 12 blooms ...	0 6	0 8	Narcissus, doz. bnchs.	1 0	2 0
Daffodils, double, bunches	0 4	0 6	Orchids, var., doz. blooms	1 6	9 0
Eucharis, doz. ...	2 0	3 0	Pelargoniums, doz. bnchs.	4 0	6 0
Freesia, doz. bnchs.	2 0	3 0	Paeonies, doz. bnchs.	4 0	8 0
Gardenias, doz. ...	1 0	2 0	Roses (indoor), doz. ...	2 0	3 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	Red, doz. ...	2 0	4 0
Hyacinths, Roman, bunch	0 4	0 6	Tea, white, doz. ...	2 0	3 0
Iris, per doz. bunches	6 0	12 0	Yellow, doz. (Perles)	2 0	3 0
Lilium Harrisii, 12 blooms	3 0	4 0	Safrano, doz. ...	2 0	2 6
longiflorum, 12 blooms	4 0	6 0	Smilax, bunch ...	3 0	4 0
			Tulips, bunch ...	0 4	0 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Fuchsias, doz. ...	4 0	6 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, doz. ...	4 0	6 0
Boronia ...	12 0	18 0	Hydrangeas ...	6 0	10 0
Crotons, doz. ...	18 0	24 0	Lilium Harrisii, doz. ...	12 0	18 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	8 0
Erica various, doz. ...	9 0	24 0	Myrtles, doz. ...	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	specimens ...	21 0	63 0
Ferns, var., doz. ...	4 0	18 0	Pelargoniums, scarlet, doz.	4 0	6 0
small, 100 ...	4 0	8 0	Solanums, doz. ...	6 0	12 0
Ficus elastica, each ...	1 0	7 0	Stocks ...	4 0	6 0

Bedding out plants in variety from 3s. doz.



BEER DRINKERS v. BREWERS.

OR we might say, The People v. Farmers. Such used to be the case, but it now appears as though the farmer is to be left out of the matter. In most countries we find what we may term a national beverage—the drink of the people; something cheap and wholesome and something peculiarly adapted to the wants and requirements of the climate, "home grown," the manufacture of which is a source of modest wealth to several sets of people—the grower of the raw material, the more skilful manipulator, and the honest retailer. And it seems to us a great pity that for the sake of the extra profits filling the pockets of the few that the national beverage should be of alien growth.

We find there are districts in England peculiarly adapted for the growth of the best class of malting Barleys. We find that there is a class of men who have spent their lives and brought the wisdom of their forefathers to bear on the improvement of these Barleys, till at last they have got something as near perfection as possible; we find these men, by means of their Barley growing, able to afford good wages to a large class of labourers, to pay a fair rent, and to supply the nation with excellent mutton into the bargain (for mutton and Barley production must go together). And now it appears highly probable that these men will find their occupation gone, their crops unremunerative, their landlords and labourers unpaid, and this good Barley land thrown out of cultivation. It will take a wise man to calculate the loss to England in general should such a thing happen.

The strong heavy clay went out of cultivation first, and all hopes were rested on the lighter and more easily worked wold and cliff lands. People were under the impression that though we might import Wheat with advantage to the greater community, yet as ours

was the best Barley and mutton in the world there would still be a trade for those two commodities, and that men who embarked in that branch of agriculture were sure of a living.

The Barley has not deteriorated, neither has the mutton become lean and stringy. It is the mania for the cheap and nasty that appears to have seized the majority.

By the slow workings of time alterations have taken place in many manufactures. The great firms absorb the work; the lesser firms go to the wall or are amalgamated in the greater. These firms become companies with shareholders, and shareholders look for dividends (large if possible), so it becomes essential that every detail be worked with the greatest economy, not for the benefit of the purchaser, but for the swelling of the dividends.

The purchaser's interest is not consulted, and so we find that these great brewery companies are employing substitutes for the sweet wholesome malt grown on English farms, and taking in its place all manner of foreign grain that we cannot produce, and filling the alien's pocket with our gold.

If this beer were as good as the old-fashioned "nut brown" of our fathers we might not grumble much, and especially if it were retailed at a correspondingly low rate; but when we find that we have still to pay 3d. per pint for a very inferior article—a drink that increases instead of assuaging our thirst; a drink that is positively injurious to our health—we think we have a just cause of serious complaint. What is sauce for the goose ought to be sauce for the gander; yet a grocer is bound to declare if his coffee be pure Mocha or a mixture of chicory—in fact, all food purveyors are subjected to severe pains and penalties for adulteration, and yet the brewer goes on his way unmolested and unchecked.

Have our readers any idea at all as to the quantity of materials other than malt now used in the production of beer? We think not. What will they say when we tell them that sugar, raw grain, Rice, and Maize used by brewers is equal to 12,500,000 bushels of Barley malt? To produce this Barley we should need 400,000 acres of land, and we should bring into Barley cultivation on the four-course system 1,600,000 acres. This would go a long way to resuscitate English agriculture; and why should not we have this money and work in our hands instead of paying it over to the producers of sugar, Rice, and Maize? Why, indeed? It is the old story—the haste to be rich. The brewing brotherhood are very strong, and practically have the power, both in and out of Parliament, to do exactly as they like; they grow rich, they get the monopoly.

Twenty-five years ago a 36-gallon of beer cost 24s. to produce—that included the malt tax; to-day the same 36-gallon can be concocted for 12s. 6d. Less Hops are used (a valuable bitter), Barley substitutes, the beer is weaker, and the retail price continues the same—and the breweries pay big dividends.

From 40s. per quarter, in four years Barley has dropped to 23s. 3d., and where the decline will stop no one knows. As land goes out of cultivation, the large farmers either break or retire on a remnant of their means, the landlord retrenches on every hand, and the labourer goes to swell the already immense population of our towns.

WORK ON THE HOME FARM.

Another week of bright sunshine has done wonders for the grain crops. Wheat now looks wonderfully well and will soon be in ear. There may and should be quite an average crop of grain, but there will not be as much straw as there was last year. Barleys have improved, but still are not very satisfactory. A few genial showers would do much good, and in addition to encouraging the Barley would refresh the Clovers, which are still too young to stand a long spell of drought.

Turnips put in early look really well, the next sowing are only just peeping, but appear to be coming well. We hear complaints from strong land districts that Turnips cannot be got in at all. The land has baked as hard as a brick after the soddening influences of the heavy rains in May. Such land required taking in hand and getting ready at one exact time during the drying process, perhaps during only one day would it be in the proper condition to work down in anything like form, so that a farmer with a large acreage of such like land, and only an ordinary force of horses cannot be blamed if he has not taken advantage of such a very fleeting opportunity. How to get the work of the farm done at all seems to be the problem of the future.

We see reports from the North that farm servants were never so difficult to engage at the May day hirings, and scores of those who were engaged declined to fulfil their engagements, and have had to appear in the police court to answer for their delinquency; in some cases the only plea being that they had let themselves too cheaply, and had afterwards obtained better terms.

We are sowing sulphate of ammonia on the Potatoes, 2 cwt. per acre, and earthing the Potatoes up as they become high enough. Care has to

be taken only to sow the sulphate when the haulm is absolutely dry, otherwise much damage may be done. The haulm must be really dry to the touch, even a slight dew would hold the manure on the leaves and cause damage as serious as that from a sharp frost.

Mangolds are growing well, and it is a capital time for cleaning them. The first top-dressing, in the shape of 1 cwt. of nitrate of soda, should be sown at once after the plants are thoroughly cleared of weeds. Do not wait for the singling process, top-dress now and thin out after, then the manure will be ready to carry the plants on after their check.

HEREFORDSHIRE AND WORCESTERSHIRE AGRICULTURAL SOCIETY.

ON the occasion of the meeting of this Society at Stourbridge last week Lieutenant-Colonel Webb and Mr. Edward Webb entertained a large and influential company to dinner in the Town Hall, Colonel W. G. Webb presiding. Lord Cobham, in speaking on agricultural depression, observed the great shows, such as the Royal, the Bath and West of England, the Smithfield, and the Birmingham and others, did much good to agriculture in their way and in a manner which they in their society could not attempt to imitate. In them they had very rich men who showed beasts which had been brought to the utmost pitch of perfection, regardless of the profit upon the transaction. They were rich men spurred on by the rivalry of other rich men, and they served a useful purpose in showing them to what perfection the stock of the country could be brought to under judicious management; but profit did not come into the matter, and even those larger shows he wished that more encouragement could be given to the production of stock and crops upon purely economical and commercial principles. The time had long past when it was thought that the fool of the family might be put to agriculture, for farming now had become more scientific and more business-like occupation. Mr. Haskew, in reviewing local progress, said coming to their more immediate manufacturers he should not omit the marvellous growth and prosperity of their neighbours, whose name was world-wide, that of Messrs. Edward Webb & Sons, the royal seed growers. Their name was known not only in the civilised, but also with the more uncivilised portions of the world.

Colonel Webb, in replying, said they had heard some able speeches that evening upon agriculture, and he perfectly agreed with a good many, but there were some which required the earnest consideration of agriculturists, not only in Herefordshire and Worcestershire, but in other counties as well. More attention might be given to many things, he thought, and especially to fruit growing, which had not been mentioned that evening. There was a great field for fruit growing if Worcestershire and Herefordshire would only take it up. He touched upon the advance of science in growing crops, especially Hops, so much so that now they could almost always insure a crop, and passed on to another branch which had been forgotten—that of poultry rearing. It might be said it was only a minor matter, but he reminded them it was the "mickle that made the muckle," and it behoved them, as agriculturists, to pay attention to the minor details, for the next few years which they would have to face would be trying ones.

Mr. Edward Webb also thanked them all for the very kind manner in which they had drunk the health of his brother and himself. As chairman of the local committee his work from the first to the last had been a labour of love. The town welcomed the show with the greatest possible pleasure, and wished it every success. He hoped what his brother had said as to agriculture would live in the future with them. They had to-day low prices for Wheat and many other grains, but they had had reductions in rents, which, he trusted, together with good seasons, would bring about better prospects in the future.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1899.	June.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs	
Sunday	.... 11	30.274	55.2	51.5	N.	62.1	68.4	49.5	106.3	45.9	—
Monday	.... 12	30.169	63.1	58.1	N.E.	61.6	80.5	48.9	127.0	43.6	—
Tuesday	.... 13	30.115	57.0	50.9	N.	62.2	65.6	53.1	112.9	47.2	—
Wednesday	.. 14	30.092	51.2	46.5	N.	60.9	65.1	43.1	103.8	38.4	—
Thursday	.. 15	30.146	61.6	52.9	N.	58.9	76.1	42.3	119.6	37.0	—
Friday	..... 16	30.084	64.7	55.1	E.	61.1	80.2	46.3	122.2	42.1	—
Saturday	.... 17	30.066	65.1	56.1	N.	62.8	79.3	48.1	119.2	45.1	—
		30.133	59.7	53.0		61.4	73.6	47.3	115.9	42.8	—

11th.—Overcast early; sunshine from 10 A.M.

12th.—Much haze in morning; clear, but cloudy at times, in afternoon.

13th.—Overcast early; occasional sun after 10 A.M.

14th.—Overcast morning, a little sun after 1 P.M., and bright evening.

15th.—Bright sunshine all day; bright night.

16th.—Almost cloudless throughout.

17th.—Bright sunshine all day; clear night.

The third rainless week, rather overcast; temperature near the average; daily range large. No rain fell between May 24th and June 17th—twenty-four consecutive days.—G. J. SYMONS.

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„ Nobile (our superior type) ..	2/-	3/-	4/-
Thunia Bensonæ	2/6	3/6	4/6
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Lilium Nepalensis	2/6	3/6	4/6
„ Wallishianum	2/6	3/6	4/6

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THE ROYAL HORTICULTURAL
SOCIETY.

RARELY, if ever, has this, the chief horticultural society of the kingdom, been more active than at the present time, and large accessions of new Fellows are gratifying incidents of every meeting. The work it does is also strictly in accordance with its charter—namely, “the improvement of horticulture in all its branches, ornamental as well as useful.” Neither decorated donkeys nor other floral frivolities have intruded on its domain. Interest appears to increase in the various trials at Chiswick, and the meetings in London bid fair to outgrow existing conveniences. So apparent is this that it is questionable if the provision of an appropriate centre for exhibits and visitors is not even more urgent than a “new Chiswick.” The old garden is not done yet, and can be made of great use to the Society for still more years, while in the Westminster Drill Hall there will soon be “no room to live.”

We are reminded of the chief function of the season by the arrival of a prospectus setting forth the plan and proceedings of the International Conference on Hybridisation and attendant exhibition. This conference was a happy idea, and is evidently to be carried out on a comprehensive scale. The subject, besides being fascinating, is of the greatest importance, and in potentialities illimitable. The proposition has “caught on” amongst leading hybridists and botanists in various countries, nearly forty, we believe, being expected from abroad.

Last week we published a list of Veitch Memorial medals for the best new cross-bred or hybrid fruits, flowers, and vegetables, the result of intentional (not accidental) cross fertilisation. It may be stated for the information of the inexperienced in such matters that when pollen is transferred from one variety of flower to another of the same species the resulting seedlings are cross-breeds, but if the transfer of pollen is between two distinct species of a genus the influenced seedlings are hybrids; if between species of different genera they are

No. 2648.—VOL. C., OLD SERIES.

b eneries or ligeneric hybrids. Thus there are a thousand times more cross-breds than hybrids or bigeners, or both. We insert a letter on the subject of what is "new" in the sense required for winning the Veitchian medals.

WHAT IS A NEW FRUIT OR VEGETABLE?

I ask this question because of the list of Veitch Memorial medals offered for distribution at the Hybridisation Conference just published, and which should be eagerly sought for by hybridists and cross-breeders. But it will doubtless occur to others beside myself, that if such awards to hybridisation could have been made public a year or two since, a great incentive would have been given to labour in the field of cross-breeding. There was, however, nothing to call forth the encouraging offer till now. Now, in asking what in the case of four of these medals constitutes a new fruit or vegetable, I feel difficulty in understanding. Whether it is enough that two Apples or Pears, or other fruits, or of Peas, Potatoes, Onions, or other vegetables may be intercrossed, to call or bring such operation within the meaning of the term cross-breeding. Of course, I do not assume that such is the case; but the question is, what do the donors of the medals assume? But if it is intended to invite the products of such crosses as Grapes and Currants, Apples and Pears, Peaches and Plums, Cherries and Crabs, and so on; or of Peas and Beans, Potatoes and Artichokes, Kidney Beans and Broad Beans, and so on, then is the definition of new as applied to either products severely restricted. The *Rubus* family in fruits have given us the most recent of hybrid productions, if really such; but not one is worth a medal. Of vegetables, none of really hybrid breed has been heard of. The nearest approach to such is probably Mr. W. Smythe's cross-bred Dwarf Beans, from the Dwarf Kidney and climbing Scarlet Runner sections. But one wonders whether such products can be classed as "new." It would seem as if the donors of the medals wanted new *kinds* as the product of hybridisation, and not mere new *varieties* as the product of intercrossing varieties.—A. D.

We think that plants resulting from the crossing of "varieties" with the studied intention of raising others distinct from and improvements on, both pollen-yielding and seed-producing parents are eligible, though not chance seedlings from unknown parentage; but we are open to correction. A plant raised by intercrossing a variety of the Dwarf or French Bean (*Phaseolus vulgaris*), an annual a foot high with white flowers—with a variety of the Scarlet Runner (*P. multiflorus*), a perennial of tall twining growth with scarlet flowers, would presumably be a hybrid; but the result of a cross between either of these and a Broad Bean (*Vicia Faba*) would be a bigener.

Reverting to the prizes: if cross-breds or strictly new "varieties," are, as we apprehend, eligible, there ought to be a great display composed of such flowers as Begonias, Pelargoniums, Carnations, Pyrethrums, Delphiniums, Sweet Peas, Orchids, and others in season; also Peas, Beans, Cucumbers, early Potatoes, and Tomatoes, though the date may be too late for many Strawberries and too early for most other hardy fruits, yet Melons, Grapes, and some other kinds grown under glass may be forthcoming. If, on the other hand, only true hybrids are to be regarded as "new," there must be a great limitation of exhibits that can be open to receive the medals in question. The Williams' Memorial medal ought to bring forth interesting and diversified collections of "hybrid and cross-bred plants," as newness is not a stipulated condition.

Under any circumstance the coming Conference will give a great stimulus to further effort in systematic endeavour to raise new and improved products of various kinds in the domain of gardening, and Triennial Conferences (quinquennials may be too slow in these go-ahead days) might be expected to bring together surprising results, also helpful and interested visitors from various parts of the kingdom and other lands.

Chiswick will be highly worthy of a visit on the 11th of next month by all who are interested in the important subjects to be discussed there, and continued in the Town Hall, Westminster, on the following day, while the banquet in the evening, there can be no doubt, will be a brilliant success.

EXAMINATIONS IN HORTICULTURE.

We have received the list of successful candidates, together with the merit marks accorded them by Rev. Prof. Henslow and Mr. James Douglas, the Examiners appointed by the R.H.S. With the

half-yearly index of necessity taking up much space we regret the impossibility of publishing the list, and especially as we have been requested to insert the questions propounded, and which will possess wider interest, as well as stimulate the faculties, especially of young gardeners, in the direction of answering them for themselves, by way of practice for an orthodox attempt another year. They must choose four of the questions in each section, striking the others out, and write answers to the eight questions in two and a half hours, without consulting a book or notes of any kind. This would be good practice. Those who have not hitherto been candidates may, if they wish, send their papers to the Editor, who will inform them of their chances of success in a serious attempt in the future. This was done in the case of some of those who passed in the recent "exam," and who sent stamped directed envelopes for return. The questions are as follow:—

DIVISION A.—ELEMENTARY PRINCIPLES.

1, Compare the structure of a Bean with that of an Onion seed. How do they differ in germination? Describe the peculiar movements which germinating seeds exhibit.

2, What differences exist between the manner and places where rootlets arise from roots, and branches from stems? Of what use are branches, and what trees have none?

3, What hinders the proper functions of leaves, and what should a cultivator attend to, in order to enable them to exercise their complete action?

4, Give any instances of failures, and state your opinion as to their causes, in crossing distinct species. What are the general characteristics of hybrids.

5, What is meant by "fixing" a new race, and how is it to be effected, if possible?

6, Describe the flower of the Pea, of a Primrose, of a Salvia, and of any Orchid; and explain how they are adapted to insect pollination.

7, What are the injurious effects of (i) too much water; of (ii) too great a heat; and of (iii) excessive drought upon plants?

8, To what natural orders do the following plants belong, and why—*Clematis*, *Malope*, *Geum*, *Gunnera*, *Fuchsia*, *Scabiosa*, *Cobaea*, *Amaranthus*, *Ixia*, and *Ruscus*.

DIVISION B.—HORTICULTURAL PRACTICE.

9, What is generally understood in this country by an "American Garden?" Give the names of the most suitable plants for it, and the best kind of soil.

10, What is meant by a "sub-tropical garden?" Describe the best position for such a garden; also the most suitable plants, and how to cultivate them.

11, What is the right width for garden paths and carriage drives? Describe their formation, and the best materials to use.

12, Is it possible to obtain a supply of Roses all the year round from an English garden? Describe their propagation and culture under glass and in the open ground.

13, What are the most useful fruit trees* to grow under glass? Describe the best form of glass structure for the purpose, and the method of culture.

14, How would you proceed to obtain a succession of Garden Peas and Dwarf Kidney Beans? Can they be obtained all the year round? If so, how?

15, What plants are generally grown for salads in British gardens? How may a supply be obtained all the year round?

16, What is the best aspect for a flower garden? How would you proceed to lay it out and stock it?

For answering their own choice of eight of those questions we find that eighty candidates obtained 200 marks and upwards, Mr. Harrington H. Eaton of the County Technical School, Stafford, leading with 285. Fifty candidates received between 150 and 200 marks, bringing them into the second class. Thirty students who obtained over 100 marks were placed in the third class. It is apparent that such questions are only intended for professional gardeners and intelligent, well educated, and persevering amateurs. To attempt to cram the minds of ordinary uneducated workers with the requisite knowledge for answering questions of the above nature would be time and energy wasted. We were preparing a further digest of results when the following communication was received.

COMMENTS ON THE R.H.S. "EXAM."

I have been favoured with a copy of the questions set at, and the results of, the recent R.H.S. examination of candidates for honours in horticulture. It is interesting to note at the outset that there is a material falling off in the number of candidates, as only 165 were presented, as against 190 last year. That is indeed a considerable decrease, and may be said to indicate grave doubts on the part of those

* The word is intended to exclude Vines.

young persons interested in gardening as to the present method of examining being quite fair towards them. Should this ratio of declension be continued for three years, then we may expect a repetition of what happened to the Society of Arts' exams in horticulture thirty or more years ago, when with Dr. Hogg and Thos. Moore as examiners the questions submitted to candidates were far more practical than are those of to-day.

Another unquestioned fact in relation to these present-day exams is that they are fast resolving themselves into battle royals between rival schools, or laboratories, or colleges, for precedence for their respective pupils. Anyone looking over the list of candidates placed in the respective classes will not fail to notice the prominence given to these respective institutions, which, whatever they may do in producing practical and useful gardeners, at least get a good advertisement. Thus Swanley Horticultural College takes the cake with thirty-two placed pupils, Chelmsford Laboratory next with twenty, Holmes Chapel Horticultural School with eleven, and the Stafford Technical School with nine, making a total of seventy-two candidates out of 160 passed. So far as can be seen, there are no other teaching institutions; certainly no other is mentioned. It is a most remarkable fact that the chief national school in practical horticulture—the Royal Horticultural Society's Chiswick gardens—is not credited with a single candidate. Naturally, it may be expected that in establishing this examination the R.H.S. would be the first body to see that its practical school of gardening sent numerous candidates for its own exam. Kew, again, does not send one, unless the candidate residing at Chiswick belongs to one or other of these great gardens.

So far amongst counties that have no horticultural schools, Surrey has usually sent the highest number of candidates. I count this time twenty from that county as having passed—a very good proportion indeed, considering, so far as I am aware, the county sets up no scientific school, such as a few other counties possess. Kent, which in the matter of purely technical instruction in practical horticulture, stands amongst the best instructed of counties, sends other than from Swanley College only two candidates. Evidently the Kent C.C. does not value these exams much. Of the passed 160 candidates, twenty-six are females, and of these twenty-four are from college or laboratory. It may be expected that some of these have, of course, gone in for the exam to gratify their respective teachers; but to assume that Horticulture—written with a capital H—will benefit thereby is absurd.

But what of the questions set? These readers may discuss themselves, as doubtless they will be published. If we look at the first eight, or elementary questions, it is seen that these are almost exclusively of a physiological order; only two, Nos. 3 and 7, having any bearing on practical gardening, and then only in a most limited degree. Nos. 6 and 8 are essentially botanical. It is not difficult to understand that such semi-scientific questions as these are favoured in awarding marks, although they would leave the cleverest of replies still very much wide of sound practice.

In the division allotted to horticultural practice, only one relates to fruit culture, and that under glass, and very limited. Two only relate to vegetables, but these are very good and practical. The question relating to what is an "American garden," is quite out of date. No one refers to American plants or gardens now. Our shrub and hardy plant gardening is far too cosmopolitan for such divisions. In the same way question No. 16 is of no value, because in flower gardens we grow plants that need cool as well as warm aspects. The term "flower garden" is now an enormously wide one.

However, I think I have said enough. To me the product of this annual exam is very disappointing. It fails to provoke general interest evidently, and seems now to be mainly kept alive by the competition of the rival schools.—PRACTICAL.

It must not be taken for granted that we agree in everything that is said by our correspondent. He has evidently examined the matter carefully, and we suspect he knows more of the examinations of a generation ago than we do, nor do we think he was a plucked candidate. The candidates in schools and colleges predominate, as they undoubtedly ought to do, as being specially trained over a long period, yet there is a wider representation of non-schoolmen and collegians than appears in the communication.

The county passes seem to stand somewhat as follows:—Surrey, as stated, 20; Berks 11, Leicester 8, Hants 6, Isle of Wight and Middlesex, 5 each; Dumfriesshire, Lancashire, and Yorkshire, 4 each; Stafford, Hants, and Kent, 2 each; Derby, Gloucestershire, Lincolnshire, and Westmoreland, 1 candidate each.

The numbers, we are convinced, in no sense represent the relative capacities of gardeners in the several counties; and in some of them the best and most useful teaching of its kind is given—notably in Derby and Kent, but is concentrated in meeting the particular

requirements of allotment holders, cottagers, tradesmen, and others, who desire to make the land they occupy, with their home surroundings, as profitable and attractive as possible, and it is gratifying, indeed in some instances wonderful, to see what has been done in those and other counties as the result of such teaching by practical men. Such cases cannot be met by the R.H.S. exams; but many more young gardeners might enter these to their own advantage, though it is of no use disguising the fact that numbers of them decline to do so because of what they regard as "college cramming and competition," though it is really not "competition" at all, as if for prizes, but simply a case of every candidate doing his or her best, and being credited with the results attained.

ADIANTUMS FOR CUTTING.

THE demand for cut Fern fronds for various purposes is enormous, and no matter what steps are taken to insure a continuous supply, there generally occurs some period during the year when hard, ripe fronds are sought for in vain. There seems to be no limit to the amount which could be made use of in large private gardens where much decorative work is done, but when fern is scarce other substitutes have to be found for it, and the force of circumstances often has the effect of showing us that foliage of many kinds may sometimes with advantage be used in the place of fronds of *Adiantum*; but for many purposes these are quite indispensable, and their popularity does not seem likely to wane. *A. cuneatum* and *elegans* are the varieties most largely in demand, and in order to insure a supply of fronds throughout the year it is necessary to work on systematic lines, for if haphazard methods are followed breaks will inevitably occur in the supply.

An excellent plan to pursue is to grow the plants in collections, and never to cut a single frond from a given stock until full development and hardening have taken place; then to pick the fronds as required till all the ripe ones have been removed, and grow the plants again till a successional crop of fronds is ready. From strong plants two crops of fronds may generally be secured in one season. Take, for instance, plants which were repotted during January or February. The first set of fronds produced should have been ready for picking some weeks ago, and as these were secured a succession of young ones ought to be advancing. These, if encouraged to grow, will give good fronds during the end of the summer and autumn, after which the plants ought to be rested by being kept dry at the roots and cool till early spring.

Giving *Adiantums* a season of rest is in reality one of the most important points connected with their culture, for if they are kept growing throughout the year, their fronds being also continuously removed, they do not last long in good condition, but the crowns and fronds gradually get weaker and smaller, till they refuse to grow at all. Each time a frond is picked before it has become hard it tends to weaken the crown. I once knew a gardener who was required to produce a large quantity of Maidenhair Ferns for decorative work during the autumn months. He succeeded in obtaining what was required by a very simple plan, and had good reason to be proud of his plants, which were grown throughout in a cool house, and allowed to complete the whole of their growth before any of the fronds were picked. During the autumn each plant was quite cleared of fronds as they were required for use. Water was then withheld till the spring, and the plants were repotted once in two years. With this treatment bold crowns and good fronds were produced year after year.

The above serves to illustrate an excellent method of culture for securing fronds for cutting in the autumn. To give a supply during spring and early summer a number must be grown in heat, but in each case it is important that the fronds become hard and ripe before being picked, or deterioration will gradually take place. It is not wise to keep plants lingering after they have become stunted. They should instead be consigned to the rubbish heap, and seedlings grown to take their place. These can now be bought so cheaply, or raised at home, that one item in systematic Fern growing is to pot a number of young plants each year, so as to always have some vigorous "young blood" to depend upon.

The season when *Adiantum* fronds are usually extremely scarce is from December till March, but with young plants the difficulty of maintaining a supply then can be surmounted, by procuring strong plants in 3-inch pots during October, potting them in 5-inch ones, and forcing in heat. Good mellow loam, with abundance of fibre, will grow them well without any addition, but so few growers are able to obtain just the right kind of loam that it is usually safer to employ a compost formed of two parts loam, one of peat, with a liberal addition of sharp sand. When the loam is not good mix an equal portion of peat with it, and in all cases pot firmly.

Adiantums delight in a moist atmosphere, but this should be maintained by damping rather than by syringing the plants. They

also thrive much better on an open stage than one covered with spar or ashes; they seem to enjoy having the warmth from the hot-water pipes constantly circulating among them, provided the atmosphere is kept charged with moisture. To grow the plants quickly abundance of heat should be maintained, little air, and a moderate amount of shading given, and when the fronds are fully developed the plants ought to be removed to a cool structure to harden before being picked for use.

Fronds of a rather pale green are the most highly prized, and to secure such no manure of any kind should be given, and shade only when really necessary during the late stages of growth. When a crop of fronds has been cleared from plants in the summertime, those which have young growths starting should be again placed into heat, but any having dormant crowns, if removed to a cool frame, fully exposed to the sun, and kept rather dry at the roots for a month, will often start vigorously into growth when water is more freely given. Such plants supply useful material for cutting in the depth of winter. All Fern fronds should, if possible, be plunged in water for an hour or so before being used, as the practice prolongs their lasting qualities.—H. D.

SEASONABLE NOTES ON FIGS.

YOUNG TREES FOR EARLY FORCING.

THESE must now be in the pots in which they are to fruit, and on no account be neglected. Afford all the light possible, and keep the trees well syringed and supplied with liquid manure so as to insure a clean, sturdy, well-nourished growth. When that is complete they should have abundant ventilation so as to ripen it thoroughly. Stopping must not be practised after this date. When the growth is matured the trees may be placed outdoors in a sunny place, but in dull and wet weather means should be adopted for warding off heavy rains.

EARLY FORCED PLANTED-OUT TREES.

The second crop fruits on trees started at the new year are now a good size, they being about three weeks earlier than usual, and if judiciously thinned there will be a crop of delicious Figs. If the crop is a heavy one reduce to eight or nine fruits of the small, five or six of the medium sized, and three or four of the large-fruited varieties to each square foot of trellis covered by the trees or exposed to sunshine, leaving the most forward at the base of the shoots, which will ripen earlier and attain to greater perfection than those near the points. These parts should be kept free from fruit, and be allowed to grow up to the light. This is necessary to secure well-ripened wood so as to insure a full first crop the following season, the trees being at rest by the middle of October. If the borders have been allowed to get dry they must be watered repeatedly until the soil is thoroughly moistened. Liquid manure will be required by trees having their roots in borders of limited extent, and more frequently than by trees with a large extent of rooting area—about once a week in the first case, and every fortnight in the other—giving thorough supplies, and always in a tepid state. A light mulching replenished from time to time will encourage surface roots, and a sprinkling of artificial manure on the border and washed in will assist the Figs to swell.

Syringing will be needed daily, except in dull wet weather. If red spider gain a footing, it must be dislodged by syringing the trees with an insecticide; and scale should be removed by using a brush. Painting the hot-water pipes with sulphur is an effectual remedy for red spider, the pipes being heated to 170° to 200° for about an hour, and the house kept close. Artificial heat will not now be necessary unless the weather suddenly become cold and wet, then sufficient only to maintain a night temperature of 60° to 65°, and 70° to 75° by day. Ventilate early, especially on clear days; and close sufficiently early to run up to 85° or 90°, or even 95° to 100°, providing plenty of atmospheric moisture.

SUCCESSIONAL FIG HOUSES.

When the fruit gives the least indications of ripening by changing colour afford more air, insuring a circulation constantly by keeping the top and bottom ventilators open a little. Reduce the atmospheric moisture gradually, and expose the fruits as much as possible to the full influence of light and air. Lessened supplies of water will be needed at the roots, but they must not be allowed to suffer. If red spider be troublesome a thorough washing may be given the trees after the fruit has been closely picked, and this repeated each time the fruit is gathered will keep the pest under until the crop is cleared, when more effectual means can be adopted for its eradication. It must be done early on a fine day, and the water be soft, clear, and tepid, otherwise the Figs may be discoloured, and acquire a musty flavour.

TREES SWELLING THEIR CROPS.

A light mulching of short manure acts as a source of moisture, nourishment, and surface rooting. When the roots are active they can be fed to any extent with top-dressings of phosphoric and potassic manures, but care must be taken not to unduly excite growth. A handful per square yard of five parts dissolved bones, two parts powdered saltpetre, and two parts ground gypsum mixed will assist Figs to mature heavy crops of fruit, and make sturdy, healthy, fruitful wood. Syringe twice a day in fine weather, always early in the afternoon, closing the house at the same time, and so as to gain enough sun heat to rise to 90° or 100°. The fruit will then swell to a good size, and rest being assured at night by allowing

the temperature to fall to a safe minimum, the trees will be capable of performing a long day's work.

LATE HOUSES.

Trees against walls covered with glass often grow rampantly, and root-pruning affords little better results as regards fruit, because the trees are too far from the glass. In such cases it is better to allow them to grow up with one stem or more to the roof and then train the growths to a trellis about 1 foot from the glass and down the slope. The sun then shines into the points of the shoots, and they push Figs at nearly every joint. Keep the growths thin, stop at the fifth leaf, and mulch and water the borders. Ventilate early, and utilise sun heat by early closing, feeding according to the requirements. The trees will ripen one crop in August, and the second crop Figs being removed and the shoots allowed to grow to the light so as to get their points well ripened, a full crop may be relied on another year.—GROWER.



ROSE SHOW FIXTURES IN 1899.

- JULY 1st (Saturday).—Crystal Palace (N.R.S.).
 " 4th (Tuesday).—Gloucester and Harrow.
 " 5th (Wednesday).—Brockham, Ealing, Hanley*, Hitchin, Reigate (Redhill), and Tunbridge Wells.
 " 6th (Thursday).—Colechester (N.R.S.) and Farningham.
 " 7th (Friday).—Hereford.
 " 8th (Saturday).—Manchester.
 " 11th (Tuesday).—Reading and Wolverhampton.†
 " 13th (Thursday).—Bedale, Brentwood, Eltham, Helensburgh, Norwich, and Woodbridge.
 " 14th (Friday).—Ulverston.
 " 15th (Saturday).—New Brighton.
 " 19th (Wednesday).—Cardiff*, Newcastle-on-Tyne.†
 " 20th (Thursday).—Salterhebble and Sidcup.
 " 22nd (Saturday).—Newton Mearns.
 " 25th (Tuesday).—Tibshelf.

AUG. 3rd (Thursday).—Liverpool ‡

* Shows lasting two days. † Shows lasting three days.

‡ Show lasting four days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSES GENERAL SCHABLIKINE AND MARIE D'ORLÉANS.

WE have the pleasure to send for your inspection blooms of the above Rose, of which mention is made at page 473 of the Journal of June 8th. This Rose has been in our collection (and in our catalogue) for some years past, so if any of your readers wish to try it they need not send to the south of France for it. In the neighbourhood of Cannes it is without doubt one of the most attractive of the red Tea Roses, but we have never seen it superlatively good out of doors here, and we do not remember its attracting the attention of any of the hundreds of visitors who have seen the plants at various times during the blooming season. Possibly, like Papa Gontier and others of the Riviera Roses, it requires the special climatic conditions of the South to develop its full beauty. According to our experience the best for outdoor cultivation of the red or rose coloured bush Tea Roses that have come to us from the Riviera is Marie d'Orléans. This is hardy, of vigorous growth, and wonderfully profuse in yielding large, well-shaped flowers.—W. PAUL & SON, *Waltham Cross.*

[We are very much obliged to Messrs. Wm. Paul & Son for the bouquet of General Schablikine. This Rose was highly extolled by Lord Brougham, whose observations are recorded in the Dean of Rochester's new book, "Our Gardens," from which we cited them, together with the statement that the Rose could only be had from its raiser in France. This was evidently a mistake. The variety is described by Messrs. W. Paul & Son as "one of the most attractive of the red Tea Roses." To us it is more suggestive of a floriferous China Rose. The opening blooms are decidedly attractive, being rich reddish pink, changing to rosy pink, and still paler on full expansion. They are the most beautiful when young, and when associated with the small dark leafage, and numbers of buds in various stages, have a charming effect in a drawing room vase. The fresh young blooms would be also excellent for gentlemen's coats or ladies' sprays. We can imagine that a solitary and comparatively small plant or two would not arrest particular attention, but a group of a dozen flowering like the sprays before us, could scarcely fail to be admired, while flowers for cutting would be afforded over a very long period; still the preference of Messrs. Wm. Paul & Son for Marie d'Orléans must not be overlooked. Roses of this character are rapidly increasing in public favour, both for the adornment of gardens and the embellishment of rooms.]

GIGANTIC ASPARAGUS.

I HAVE been much interested in the particulars given by "W. G.," on page 491, June 15th, of the large Asparagus sold by Mr. Howell at Birmingham, and grown at Evesham. Asparagus is largely and well cultivated in that part of Worcestershire, and the area devoted to its culture increases each year. Many hundreds of acres of Asparagus are grown within a radius of four miles of Evesham, and it has become one of the most important crops of the district.

On reading the paragraph above referred to I asked myself this question: Did the bundles contain the exact number of 100 heads, as printed, or did they contain the usual Evesham market gardener's "hundred?" which is a distinction with a very great difference, his "hundred" of Asparagus being not less than 120 heads.

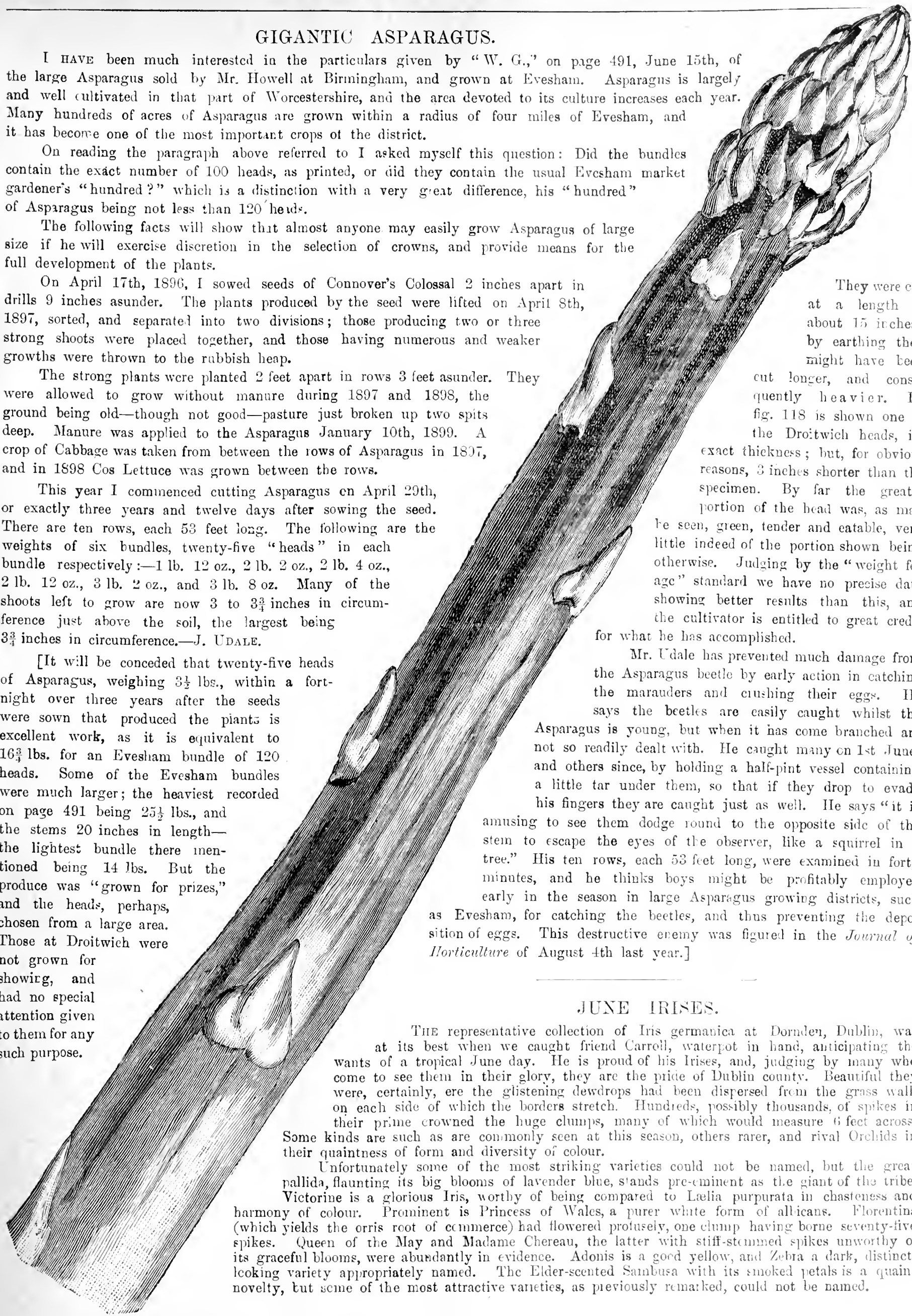
The following facts will show that almost anyone may easily grow Asparagus of large size if he will exercise discretion in the selection of crowns, and provide means for the full development of the plants.

On April 17th, 1896, I sowed seeds of Conover's Colossal 2 inches apart in drills 9 inches asunder. The plants produced by the seed were lifted on April 8th, 1897, sorted, and separated into two divisions; those producing two or three strong shoots were placed together, and those having numerous and weaker growths were thrown to the rubbish heap.

The strong plants were planted 2 feet apart in rows 3 feet asunder. They were allowed to grow without manure during 1897 and 1898, the ground being old—though not good—pasture just broken up two spits deep. Manure was applied to the Asparagus January 10th, 1899. A crop of Cabbage was taken from between the rows of Asparagus in 1897, and in 1898 Cos Lettuce was grown between the rows.

This year I commenced cutting Asparagus on April 29th, or exactly three years and twelve days after sowing the seed. There are ten rows, each 53 feet long. The following are the weights of six bundles, twenty-five "heads" in each bundle respectively:—1 lb. 12 oz., 2 lb. 2 oz., 2 lb. 4 oz., 2 lb. 12 oz., 3 lb. 2 oz., and 3 lb. 8 oz. Many of the shoots left to grow are now 3 to 3½ inches in circumference just above the soil, the largest being 3¾ inches in circumference.—J. UDALE.

[It will be conceded that twenty-five heads of Asparagus, weighing 3½ lbs., within a fortnight over three years after the seeds were sown that produced the plants is excellent work, as it is equivalent to 16¾ lbs. for an Evesham bundle of 120 heads. Some of the Evesham bundles were much larger; the heaviest recorded on page 491 being 25½ lbs., and the stems 20 inches in length—the lightest bundle there mentioned being 14 lbs. But the produce was "grown for prizes," and the heads, perhaps, chosen from a large area. Those at Droitwich were not grown for showing, and had no special attention given to them for any such purpose.]



They were cut at a length of about 15 inches; by earthing they might have been cut longer, and consequently heavier. In fig. 118 is shown one of the Droitwich heads, its exact thickness; but, for obvious reasons, 3 inches shorter than the specimen. By far the greater portion of the head was, as may be seen, green, tender and eatable, very little indeed of the portion shown being otherwise. Judging by the "weight for age" standard we have no precise data showing better results than this, and the cultivator is entitled to great credit

for what he has accomplished.

Mr. Udale has prevented much damage from the Asparagus beetle by early action in catching the marauders and crushing their eggs. He says the beetles are easily caught whilst the Asparagus is young, but when it has come branched are not so readily dealt with. He caught many on 1st June, and others since, by holding a half-pint vessel containing a little tar under them, so that if they drop to evade his fingers they are caught just as well. He says "it is amusing to see them dodge round to the opposite side of the stem to escape the eyes of the observer, like a squirrel in a tree." His ten rows, each 53 feet long, were examined in forty minutes, and he thinks boys might be profitably employed early in the season in large Asparagus growing districts, such as Evesham, for catching the beetles, and thus preventing the deposition of eggs. This destructive enemy was figured in the *Journal of Horticulture* of August 4th last year.]

JUNE IRISES.

THE representative collection of *Iris germanica* at Dornden, Dublin, was at its best when we caught friend Carroll, waterpot in hand, anticipating the wants of a tropical June day. He is proud of his Irises, and, judging by many who come to see them in their glory, they are the pride of Dublin county. Beautiful they were, certainly, ere the glistening dewdrops had been dispersed from the grass walk on each side of which the borders stretch. Hundreds, possibly thousands, of spikes in their prime crowned the huge clumps, many of which would measure 6 feet across.

Some kinds are such as are commonly seen at this season, others rarer, and rival Orchids in their quaintness of form and diversity of colour.

Unfortunately some of the most striking varieties could not be named, but the great pallida, flaunting its big blooms of lavender blue, stands pre-eminent as the giant of the tribe. Victorine is a glorious Iris, worthy of being compared to *Lælia purpurata* in chasteness and harmony of colour. Prominent is Princess of Wales, a purer white form of allicans. Florentina (which yields the orris root of commerce) had flowered profusely, one clump having borne seventy-five spikes. Queen of the May and Madame Chereau, the latter with stiff-stemmed spikes unworthy of its graceful blooms, were abundantly in evidence. Adonis is a good yellow, and Zebra a dark, distinct-looking variety appropriately named. The Elder-scented Sambusa with its smoked petals is a quaint novelty, but some of the most attractive varieties, as previously remarked, could not be named.

Away from the Iris borders proper was noticed an Iris species with tough, leathery, strap-shaped leaves (not in bloom) yielding a pronounced odour of beef; and a fine clump of the Plum-scented Iris *prismatica* bore its blooms modestly concealed in a thicket of long, narrow foliage. Many a charming alpine or hardy shrub was in bloom and beauty; but, satisfied for the nonce with a walk and talk through the Dornden Irises, we "biked" back to breakfast.—K.



RECENT WEATHER IN LONDON.—A return of hot weather to the metropolis is not generally appreciated, and on Monday and Tuesday the heat was intense. In the afternoon of the former day it was particularly oppressive. On Wednesday morning it was close and dull.

— A SHOREDITCH PLAYGROUND.—A small plot of ground in Ivy Street, Shoreditch, was recently opened, and the thickly populated district obtains a recreation ground. The area is one fifth of an acre, and the London County Council paid £2100 for it. A few small shrubberies have been made, but the rest of the land has been paved and will be used as a gymnasium. The cost of the necessary work and apparatus is £920.

— DEATH OF MR. T. W. GIRDLESTONE.—Everyone will be sorry to hear that Mr. T. W. Girdlestone of Sunningdale, very well known to rosarians, and also as President of the Dahlia Society, died on Sunday of the complaint named appendicitis, sinking after an operation undertaken to relieve the pain from which he was suffering. Mr. Girdlestone's name is well known outside horticultural circles, as his school at Sunningdale was one of the great nurseries for Eton, Harrow, Charterhouse, Winchester, and other public schools. He was so universally popular amongst his old pupils that his unexpected death will be a great blow to them and his many friends, who, I may say, are scattered over the whole world. At one time Mr. Girdlestone was a very frequent writer on gardening topics, more especially on Roses, of which he was one of the keenest and best judges, and so close an observer of their individual peculiarities that, in fact, he is said to have been able to tell the names of rare plants by their foliage. His articles were always interesting and replete with information, and since he gave up writing there have been very few who could rival him in the clear way he was able to impart knowledge of great practical use, or in the interest he gave to the subject of Rose growing. At one time he was a frequent and very successful exhibitor, but of late years had given this branch of Rose culture up, and had devoted himself more particularly to the cultivation of Dahlias, in which flowers he took the greatest interest. His death, at a comparatively early age, in the prime of life, and the full tide of his usefulness, leaves many of us lamenting a friend who had so many interests in common with us, that we feel his loss to be irreparable. R.I.P.—CHARLES J. GRAHAME.

— AN OLD HYBRIDIST.—I trust that our ancient friend, Mr. Robert Fenn, will have more tangible results after his serious and loyal ceremony of "committing to earth" than usually results to such proceedings. Interesting as was the Sulhampstead function, especially in its element of loyalty, we may not assume that the event in relation to Mr. Fenn's horticultural work by any means comprised the only act of a long and earnest life. Few men, professional or amateur, and he is essentially of the amateur order, have devoted more time to intercrossing, cross-breeding, or hybridisation so far as the Potato is concerned than he has. His latest effort, crossing *Solanum Fendleri*, a species I believe never before utilised for the purpose in this country, with a garden Potato, the old International Kidney, is of a piece with other efforts, and previously he has utilised *Maglia* in the same way. Still, so far these efforts have only resulted in the production of garden Potatoes, and possibly the product of the more recent cross will come to the same thing. But if anything should tend to produce a new strain, then the most recent cross should result. The desire to secure some absolute disease-resisting stock is the primary cause for the work still proceeding. During a long life Mr. Fenn has crossed and intercrossed literally scores of varieties, and at one time succeeded in quite revolutionising our Potato stocks. His labours never have received the notice or reward they deserve. Many men have obtained honours and awards with far less reason. But our octogenarian friend is modest, and I fear in spite of his efforts will not be one of the recipients of the hybridisation memorial medals.—A. D.

— ROYAL BOTANIC SOCIETY.—On Wednesday, June 21st, the annual floral fête was held in the Society's Gardens. There were a May-pole dance, a pastoral play, and military music. The gardens were effectively illuminated in the evening. The horticultural exhibitors included Messrs. Barr & Sons, A. W. Young & Co., J. Prewett, and G. W. Piper.

— DEATH OF MR. JAMES ANDERSON.—It is with regret that we have to record the death of Mr. James Anderson, who passed away at Glasgow on June 16th, in his sixty-eighth year, after a protracted illness. The deceased was for many years gardener to T. Dawson, Esq., Meadowbank, Uddingstone, N.B., after whose demise he established himself as a landscape gardener. Mr. Anderson was editor of the "Northern Gardener."

— LATE BROCCOLIS.—In thanking "South Yorks" and "H. B." for their notes respecting late Broccolis, I observe that the former introduces us to a comparatively little known variety southwards in June King. Does this differ from Methven's June or from Ledsham's Late White, or Sutton's Late Queen, or Veitch's Model? How much I should like to see a simultaneous trial of these assumed distinct varieties! Only at the recent meeting what was sent as a new variety came before the Fruit Committee at the Drill Hall, but a sample of another late variety, presumably Late White, was found superior. I hope an effort will be made to give us a good trial of these Broccolis shortly. No doubt in South Yorkshire large pots are common; certainly those fine 10-inch heads would need ample pot room. I hope the Editor's acknowledged pair of heads from Leicestershire are not quite such pot-bursters.—A. D.

— PLOW OR PLOUGH.—As our esteemed and versatile colleague, Mr. A. H. Pearson, has committed himself to the old Biblical and new American method of spelling plough as plow, will he also define its proper pronunciation? Now, if he employs the words blow, glow, slow, flow, and many others ending in "low," he will not find the pronunciation at all harmonising with plough or "plow," as pronounced generally. In all the above words the final, a "w," is unused. Will Mr. Pearson speak of "plo," or will he somewhat inconsistently adhere to the common pronunciation of plough or "plow?" The English language, in relation to its immense number of inconsistencies of pronunciation, is a very hard nut for the foreign student to crack. As Mr. Pearson is becoming a phonetic reformer *re* spelling, will he also reform pronunciation by calling plow plo?—D.

— A CHANNEL FLEET.—Such is the title given to a booklet that has been edited and published by Mr. Percy Lindley, 30, Fleet Street, for the Great Eastern Railway Company. This route to the Continent becomes more popular each year, for the simple reason that, as Mr. Lindley has it, one finds "Comfort, Celerity, and Cheapness," three C's which go far towards one's peace of mind when crossing the sea. The pamphlet, in addition to interesting letterpress, contains a number of illustrations showing the exterior and interior of some of the ships in the Company's splendid fleet, as well as scenes in Holland, Germany, Norway, Denmark, and Switzerland, all of which countries are expeditiously served by the G.E.R. boats. Copies of the booklet may be obtained from Mr. Lindley as above, or the Continental Department, G.E.R., Liverpool Street Station.

— DRILL HALL MEETINGS.—No one seems to have anticipated seeing such a show as was that found at the Drill Hall on the 13th inst. Everybody had thought that the Temple Show had so far exhausted the energies of trade and other exhibitors that there would have been a poor display. So far from that being the case, the show was a remarkably good one, the hall being well filled. What tributes are these shows at once to the popularity of the Society and to that principle of honorary showing. The old Metropolitan nurseryman, who used at luncheons and dinners, when the toast "The Exhibitors" was proposed, remark, "You've only to find good prizes, gentlemen, and we'll make good shows," would, perhaps, be surprised could he revisit the physical world to see what wonderful shows can be made without prizes. Exhibitors may claim that the Fellows and visitors at the R.H.S. gatherings should be deeply indebted to them, and that is true. But the obligation is not one-sided, for generally exhibitors, because of the publicity given to their products, and the not inconsiderable business done in consequence, get a fair reward. We saw evidence of that the other day, when a very fine group of plants was purchased as they stood to be sent out to Vienna. We see here illustrated what is a pretty well known fact, that for horticulture of the broadest and highest excellence Great Britain stands first amongst nations, and the R.H.S. has done wonders in helping to create that high position.—OBSERVER.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
June.										
Sunday .. 18	S. S. W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday .. 19	N. N. W.	62.8	59.2	71.1	45.3	0.08	61.5	59.9	56.1	36.8
Tuesday .. 20	S. S. E.	57.9	53.0	68.9	50.5	0.25	62.4	59.9	56.3	44.5
Wed'sday 21	S. E.	62.0	60.5	70.2	56.1	—	63.5	60.3	56.4	52.3
Thursday 22	N. N. W.	64.5	58.9	70.1	56.5	—	63.5	60.5	56.6	46.2
Friday .. 23	N. N. E.	64.1	60.0	66.3	53.1	0.15	63.5	60.6	56.7	46.1
Saturday 24	N. N. W.	59.1	55.9	64.1	54.5	—	61.9	60.4	56.8	50.5
		61.5	57.9	69.6	54.1	—	61.8	60.1	56.9	45.0
MEANS ..		61.7	57.9	68.6	52.9	Total 0.48	62.6	60.2	56.5	45.9

The weather during the week has been generally dull, with cool winds. No rain fell between May 24th and June 18th.

— RAIN AT LAST.—Although at this moment of writing, June 22nd, the rainfall has not been great, it has been most acceptable and refreshing. We had begun to cry out over the drought, although it had lasted only a few weeks, and did not for one moment compare in duration with what we had to withstand last year. But there can be no doubt but that in the South of England at least drippy weather in May and June suits best. Once get good growth on crops, then they can withstand summer heat very well. But whilst there has been much lamenting over drought, and praying, not particularly reverently, for rain, our crops have generally suffered more from the long spell of cold endured in May and early in the present month, and sharp frosts, than from lack of moisture. No doubt those engaged in haymaking will cry out if much rain falls, but we are a growling race.—WANDERER.

— ROYAL METEOROLOGICAL SOCIETY.—The last monthly meeting of the present session was held on Wednesday afternoon the 21st inst., at the Society's new rooms, 70, Victoria Street, Westminster. Mr. F. C. Bayard, L.L.M., President, in the chair. Dr. R. H. Scott, F.R.S., read a paper on the heavy falls of rain recorded at the seven observatories connected with the Meteorological Office during the twenty-eight years, 1871–98. The data has been derived from the records of the Beckley self-recording rain gauges at the following places: Valencia, Armagh, Glasgow, Aberdeen, Falmouth, Stonyhurst, and Kew. These records have been tabulated for each hour, and it is from these hourly tabulations that Dr. Scott has extracted the heavy falls. He finds that Falmouth has the greatest frequency of heavy falls, the next station being Valencia, and then Stonyhurst. The most exceptional fall during the whole period was at Glasgow, at 5 P.M., on August 11th, 1895, when as much as 0.80 inch was collected in ten minutes. The information given in this paper is likely to be of much service to engineers who want to know the rate at which rain sometimes falls in short periods. A paper by Mr. J. Baxendell, describing his new self-recording anemoscope, was read by the Secretary. A paper by Mr. R. C. Mossman, F.R.S.E., on the average height of the barometer in London, was also read by the Secretary.

— POSOQUERIA LONGIFLORA.—The majority of people have a partiality for white flowers, and in most instances they like those that are sweetly scented. The blossoms of this charming old stove plant are both, and it is a wonder it is not more grown. The leaves are deep green, the blossoms tubular on fine corymbs, being at the first glance a little like those of Bouvardia Humboldtii or B. jasminoides. Like these, too, the trusses when cut are rather apt to drop about, but on the plant they last well, as they do when taken off singly and placed in water. P. longiflora may be easily propagated by means of cuttings made of young flowerless shoots, which should be inserted around the sides of pots filled with a light sandy compost, and well drained. Frequent pinching while still in a young state induces the formation of nice bushy plants, these having a far prettier effect when in flower than when allowed to grow shapeless, and with long vigorous shoots taking the lead from others. A warm greenhouse or stove temperature is best for it all the year round, and the atmosphere must be kept moist, otherwise insects are apt to be troublesome. The pots used should be small rather than on the large side, and when well rooted the plants are greatly benefited by frequent applications of weak soot water.—H. BURY.

— KIDDERMINSTER AND DISTRICT HORTICULTURAL SOCIETY.—The usual monthly meeting of this newly formed Society, which now numbers over 150 members, was held on the 14th inst., when a paper on the "Cultivation of the Carnation, Border and Malmaison," was given by Mr. W. H. Wilson of Moor Hall, Stourport, under the chairmanship of Rowland Hill, Esq., of The Firs, a Vice-President of the Society. Mr. Wilson's lecture was very instructive and practical, containing most valuable hints on the growth and general treatment of this lovely flower. His remarks were the more highly appreciated as he is well known as an extensive and successful cultivator of the Carnation. At the conclusion votes of thanks were passed to Mr. Wilson for his lecture, and to the Chairman for presiding, and all expressed the wish that this paper was but the commencement of a series of similar papers to be given by Mr. Wilson.—T. J. R.

— ONIONS AND MAGGOTS.—Under this heading Mr. J. Shalford gives some excellent cultural hints (page 487), and under such circumstances it is not to be wondered at that he obtains bulbs good enough to draw praise from his "kitchen genius." But I think he has let his pen run away with him a little when he decries sowing in boxes except for the production of exhibition bulbs. All my main crop Onions are sown this way, and as far as this garden is concerned I find that I save time, seed, and ground, and at the same time get better crops than if I sowed outside in the usual way. Boxing has, in my case at least, been the means of setting the maggot at defiance. Again, sparrows have no chance with boxed plants, and here, unless the beds were netted, they would take the lot. Circumstances alter cases, and though, as Mr. Shalford has been careful to show, in his garden sowing in boxes is unnecessary, I can assure him that with me it is just the other way, and I could never be sure of getting a good bed under the older system. He is wise to follow the plan that gives him the least trouble and at the same time such excellent results.—H. R. RICHARDS, Coldham Hall, Bury St. Edmunds.

— FORMING LOW-BRANCHED TREES.—Some fast growing trees get finally too tall for the purposes for which they were originally planted. Through the winter season, when employment for cutters is scarce, the axe and saw are vigorously plied to head back these trees. It is thought this is the proper method to make the trees throw out wide-spreading branches. Any careful observer may see this is never accomplished. The butchered tree only endeavours to go up more rapidly than before. If this topping were to be done, says "Meehan's Monthly," late in spring, or in early summer, when the tree is in mature leaf, and starting to grow vigorously, the effect would be very different. The growth force is not sleeping at that period as it is in the winter season, but in active operation. The force intended to be expended in the upward growth must exhaust itself somewhere. Suddenly checked in its upward course, it is diverted into the lateral branches, which are strengthened accordingly. The caretaker of hedges, or, as they have come to be termed with us, live fences, understands this very well. He cuts back the strong shoots at the apex severely, and thus manages to have the hedge as thick at the bottom as at the top. Unfortunately, the tree-butcher is usually at his day's work in the summer time. It is only under the starvation stress of the winter season that he whispers in the owner's ear that his trees need pruning.

— THE RIGHT TIME TO SPRAY.—In the use of all the poisons for destroying the insects of trees and bushes and plants a great deal of the success depends upon doing the spraying at the right time. Usually the insects must be caught just before emerging from the eggs or when they emerge from the bud or leaf. Spraying at this critical time will prevent further multiplication, and will save trouble and expense. Early spraying is thus essential to effective work. While the fruit trees are nearly all sprayed in summer, an early spring application is quite necessary. This is made to forestall the fungi, scab, blights and moulds that will inevitably appear in early spring. Some insects must be attacked before the leaves appear to be killed at all. One cannot always decide whether the trees are being attacked by insects, but if on a hasty examination signs of their presence are apparent, the safest course is to take the matter immediately in hand. If the insects or diseases are allowed to get such a headway that they are troublesome, it is almost impossible to make up for lost time. When a blight takes such a hold that the leaves and bark begin to lose colour and strength, it will not be an easy matter to check the spread of the disease in time to save much of the fruit. Often the diseases do not make their full appearances until summer, but the spores and germs have been sown and are working out their mission of destruction in spring, and they can only be headed off by spraying before the buds unfold.—A. B. BARRETT (in "American Cultivator.")

CAMELLIAS AT ST. LEONARD'S HILL.

AS one sees garden after garden in various counties one realises more and more how vastly they differ from each other in their essential features. This may be characterised by its magnificent Rhododendrons, that renowned for its historical associations, a third celebrated for its Orchids, still another for its unique arboricultural treasures, and so on. And it is this constant change that maintains the interest of innumerable visits, and makes one ever anxious to explore "fresh fields and pastures new." Fortunately there is no lack of beautiful homes and gardens that are worthy of prominent recognition in the pages of the *Journal of Horticulture*, so that the taste for such travel is not likely to be soon quenched. That the popularity of gardening in our island home is ever increasing cannot be doubted, and this notwithstanding the fact that the number of immense estates that are fully maintained is smaller than was the case a generation, or less, ago.

In the particular instance now under observation—St. Leonard's Hill, Windsor, the residence of Sir Francis Tres Barry, Bart., the member of Parliament for the royal borough—the specialty is Camellias out of doors. Not that these noble plants form the sum total of this charming estate. By no means, but they are of such super-excellence, and so unique a feature, that to them full prominence must be accorded in these notes, and even then too much in their praise will not be said. Probably visitors to the spring meetings of the Royal Horticultural Society at the Drill Hall will remember the collection of cut Camellia flowers that was staged from St. Leonard's Hill by the gardener-in-chief, Mr. R. Brown, when forty-two distinct varieties were represented, though all were not named. At the first glance there was nothing remarkable in the exhibit, but closer investigation revealed the fact that every one was from plants—or, rather, bushes—grown out of doors. The expression to Mr. Brown of a wish to see them at home was no sooner hinted than a hearty invitation was given, and prompt arrangements were made, which culminated in a journey to Windsor on Thursday, April 20th. Happily the day was fine and dry, for it is perfectly certain that so much pleasure would not have been derived had the weather proved unpropitious.

At the outset it may be stated that the planting of Camellias out of doors was commenced by the gardener acting under the express wish of Sir Francis, then Mr. Barry, some seventeen years ago, and the two original plants now occupy the positions in which they were first placed, and flower year by year. The object in view was to prove the constitution of the plants to be sufficiently hardy to withstand, with no semblance of protection, the extremes of our climate. It must be said that these were planted close to the mansion in such a position as to be wholly protected from the north by the structure, and largely sheltered from the east by an angle of the building. The identical spot is almost at the extreme left-hand corner of the photographic reproduction (fig. 119). No attempt was made to plant wholesale at this period, but the much wiser course of "marching slowly" was adopted, and ultimately with gratifying results, as may be seen by every visitor at any time of the year. The initial effort was so full of promise that successive work was soon proceeding, though still tentatively. However, as years rolled on, and it was seen that the severity of the frost made no appreciable difference to the health and strength of the stock the number of plants became greater and greater until it now reaches a total of upwards of 150 specimens, ranging from youngsters a foot in height to those that have grown old in faithful service, but are yet young in the vigour of their growth, and in the abundance of their flowers.

Probably some readers of these notes who are accustomed to seeing Camellias carefully protected under glass will assume that St. Leonard's Hill is a peculiarly favoured estate as regards shelter, and does not suffer from severe frosts at all. Such a supposition would be entirely erroneous, as the beautiful mansion, which alone is worthy of a detailed description, is wholly exposed to the north, east, and west, and is protected from the south by trees only. It stands on high ground that permits the visitor, when on the terrace, to look over Old Windsor to the Royal Castle, which occupies a lower eminence some two or three miles away. In one respect it is more than likely the elevated position favours the growth of the Camellias, as it is well known that frosts of equal severity, so far as the actual number of degrees registered is concerned, are followed by vastly different effects at the summit of a hill and at its base. The drier air of the higher elevation causes the frost to be much less disastrous. But if we grant a point in favour of the situation from this aspect of the case, we must, in all justice, take into consideration the frost-laden winds that come with biting keenness from north and east almost, if not quite every year, and never do the plants the slightest harm. There they are at the present moment planted on the north, east, and west aspects, and the experience of nearly twenty years has proved them to be equally hardy with Rhododendrons and other shrubs that are supposed to have sufficient natural strength to stand safely anywhere.

It will have been observed that so far no mention has been made of the susceptibility or otherwise of the flowers themselves, but that the remarks have been strictly applied to the plants. This was done advisedly. The blooms and buds that are actually beyond the cover of the foliage turn brown on the visitation of frost, and are useless. But, on the other hand, each bud that is protected by the leaves remains uninjured, and

when we consider that some of the plants produce upwards of 500, it will be admitted that the loss of a score or so does not necessarily mean that the beauty of the specimen has gone for a season. One could hardly realise the protection that the leaves provide until they had been examined. This shows them to be very thick and of an exceptionally tough character. The amount of frost they are capable of resisting must be very great, though we are not prepared to assert that they would escape Professor Dewar's 421°. In colour the leaves are deep green, and whereas when Camellias are grown under glass it is frequently found that the leaves are turned the wrong way round, on these outdoor plants an occurrence of this nature is exceedingly rare. Then someone may ask, Is the soil of such a character as to be extremely favourable? And I should be inclined to reply in the negative, as it is a strong, holding loam, in which it is difficult to establish any plants, but which provides good food when once the roots have a firm grip. Mr. Brown, however, does not plant in this direct, but employs heavy dressings of leaf mould and grit, these in conjunction favouring rapid root action, and consequent quick establishment of the stock.

Camellia growers under glass, too, have to cope with one very considerable source of trouble, and that is bud-dropping. We have all read much in the *Journal* of late relative to Peaches and Nectarines casting their buds, and it is to a large extent the same with Camellias, though in the one case the cultivator strives for fruit and in the other for flowers only. Unless in each case the utmost attention is constantly given to the plants the buds will inevitably fall, and it cannot be doubted that it is a cause of much worry to gardeners. With the St. Leonard's Hill Camellias Mr. Brown has no trouble on this head, as the buds never drop except, as has been stated, through exposure to frost. They hold on with great tenacity, and the fully developed flowers show no tendency to fall on the least provocation, as is the case with tenderer indoor blooms. Indeed, they scarcely call for the use of wire, though no doubt this is employed to make certain positive, if such an expression will be permitted. Just as the leaves are stout and tough, so are the petals, of which the colours are excellent, though liable to be marred, if not spoiled, by rain drops.

Another point worthy of consideration is the dimensions to which the plants have attained since they have been out of doors. In dealing with this aspect of the case latitude must be permitted as the positions occupied largely govern the stature and diameter of the bushes. For example, the tallest is about 10 feet high, but as it is rather cramped for space in a shrubbery, it loses in breadth what it gains in height. The fairest test then will be a plant in the open, and the finest is probably of the variety *imbricata rubra*, which is 6 feet 6 inches high, and 8 feet in diameter, and carried this year over 500 blooms fully expanded at one time. No one surely could wish to see a grander sight. This particular bush is fourteen years old, and would be from a foot to 18 inches high at planting. Of the two original specimens one is the well known *conspicua*, which is 7 feet high by 8 feet in diameter, but this it will be remembered is in an angle of the mansion. It is wholly a question of position and not of variety, as all alike of the half hundred sorts represented flourish satisfactorily. All the names cannot be given, indeed such a course would be impossible, as many have never been so distinguished; but in addition to those referred to, *imbricata alba*, Morse's white, very fine; *alba plena*, *L'Insubria*, *Eclipse*, Countess of Orkney, and *tricolor* may be enumerated, and these must suffice.

From the plants in various situations in the grounds flowers are cut from February to June, but the profusion comes during March and April, and in May commences to diminish, until in the midsummer month the blooms become very scarce. Such, too, is the case in February, when only a rare flower in some peculiarly protected position can be secured. But it is certain that for upwards of two months no plants could produce a more charming display, or awaken so much interest as do the Camellias out of doors at St. Leonard's Hill. Just a word of advice to those who would experiment in the same direction, and we must pass on. Let the planting be done in April, the stock having been kept in a cold structure through the winter, and prior to any growth having been made, so that the new shoots may be produced entirely out of doors. These will be quite hardy, while growths made before planting might succumb. The plants for a time look rather shabby, as many of the leaves turn brown, but they soon recuperate, and become a source of pleasure to everyone. After establishment an annual top-dressing of leaf mould will be found beneficial.

Of the vegetables and fruit, both out of doors and under glass, mention cannot be made in these notes, but the Coniferous trees are so excellent that they must not be overlooked. The collection is comparatively extensive, and is rich in variety, some of the specimens being particularly handsome. For example, the not too often seen *Stone Pine* is splendid, as are *Picea nobilis* and *pinsapo*, with *Abies lasiocarpa*, *Douglasi*, *Albertiana*, and *concolor*. Then, too, there are beautiful examples of *Cupressus lawsoniana* and *C. L. aurea*, as well as *Thuia aurea* and *Thuiodium dolabrata*. *Araucaria imbricata* is grand, and a beautiful *Taxodium distichum* graces the pleasant lawn. Of forest trees, Oaks and Beech stand pre-eminent, and are very numerous. Because the Rhododendrons and the Azaleas, the hardy and tender flowers and the utilitarian portion of the estate, are not particularised, it must not be assumed that they are unworthy. As a matter of fact, they are as good in their way as the Camellias, for Sir Francis Barry is too genuine a horticulturist to neglect the garden generally simply to favour one particular plant.

notwithstanding his deep interest in the Camellia and the success that has crowned his efforts in growing it. The few hours spent with Mr. Brown at St. Leonard's Hill were usefully employed, for they taught me much with which I was not previously acquainted, as well about other flowers as Camellias.—H. J. WRIGHT.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JUNE 27TH.

ONCE again the resources of the Drill Hall were taxed to the utmost to find accommodation for the exhibits. This pressure was of course largely accentuated by the Rose Show which was held at the same time. It cannot be doubted, however, that even in the absence of the Roses the Hall would have been full, as numerous exhibitors had to have their

collection of fruit, comprising good bunches of Black Hamburgh and Foster's Seedling Grapes, Strawberries, Melon, Peaches, and Nectarines.

Messrs. Jas. Veitch & Sons, Chelsea, exhibited a basket of Strawberries, Veitch's Prolific, a very free cropping variety, also a box of ripe fruits of excellent flavour. Mr. H. Pettigrew, gardener to Lord Windsor, Redditch, staged two Melons, named Lord Hanwell and Rigmaden Park.

Messrs. Laxton Bros. sent two baskets of Strawberries, Monarch, a variety now well known, and Mentmore, a cross between Noble and British Queen; the fruits are large, a good shape, with deep colour, but as they were labelled "not to be touched," the Committee passed no remarks on them. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, exhibited fruits of Melon Gunton Scarlet, a variety of excellent flavour, which, we believe, received an award of merit, though this is not recorded on the official list; and Mr. M. Taylor, gardener to Lord Llangattock, Nannerch, sent fruits of a new Tomato, Klondyke, which appeared prolific. Mr. T. Coomber, gardener to Lord Llangattock, The Hendre, Monmouth,



FIG. 119.—ST. LEONARD'S HILL.

space reduced, while others had to be declined. Pressure on our space compels our giving a condensed report, notwithstanding the excellence of the products shown.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. J. Cheal, G. Reynolds, W. Poupart, A. F. Barron, E. Shaw Blaker, J. H. Veitch, A. H. Pearson, A. Dean, S. Mortimer, H. Balderson, G. Wythes, G. T. Miles, W. Bates, F. Q. Lane, J. Willard, R. Fife, J. Wright, and W. Gleeson.

Messrs. T. Rivers & Son, Sawbridgeworth, exhibited some Peach trees in pots that had been forced continuously for eight years, and it is doubtful if finer specimens have ever been exhibited; they were not only laden with fruit, but the latter were large and well coloured. The varieties were Sea Eagle and Thomas Rivers. The same firm also staged a collection of fruits in boxes, which included Thomas Rivers, one fruit of which was upwards of a foot in circumference, Princess of Wales, Grosse Mignonne, and Gladstone Peaches, Victoria and Byron Nectarines. Plums were represented by The Czar, while Elton, Frogmore Bigarreau, and Early Rivers Cherries completed a magnificent exhibit.

Mr. W. J. Prewett, gardener to C. A. Pearson, Esq., Farnham, staged a

staged a splendid collection of Queen Pines; the fruits were individually excellent, and constituted a fine exhibit.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, C. T. Druery, R. Dean, T. Peed, J. F. McLeod, J. Fraser (Kew), C. Jeffries, C. E. Shea, G. Gordon, J. Walker, H. J. Cutbush, E. Beckett, E. T. Cook, E. H. Jenkins, C. J. Salter, D. B. Crane, and E. Mawley.

The most striking exhibit in the Show was the group of miscellaneous flowering and foliage plants from Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, Herts. The diversified plants were splendidly grown. There were the customary foliage plants, with Liliums, Carnations, Ericas, Crimson Rambler Roses, Hydrangeas, Gladiolus Colvillei The Bride, Tuberoses, and Spiræas. Messrs. J. Peed and Son, Norwood, contributed a display of tuberous-rooted Begonias, including single and double varieties in diverse colours. The backbone of Messrs. W. Paul & Son's collection of Roses from Waltham Cross was composed of about thirty-six distinct Moss Roses. Such a number a most interesting exhibit, particularly as it was somewhat out of the common. Unfortunately, just before noon, the tabling gave way,

and visitors were therefore prevented from seeing the full beauty of the collection. Other Roses were utilised to complete the group. Mr. H. Walters, Eastwell Park, Ashford, Kent, showed Carnation Lady Gerard.

Messrs. Dobbie & Co. sent from Orpington some excellent Sweet Peas, but space was so limited that they had to be closely packed together, thus practically destroying the good effect. All the best varieties were shown. Messrs. Parr & Sons, Covent Garden, were represented by hardy herbaceous flowers, Pæonies being most conspicuous. These were brightly beautiful, and comprised single and double flowers. Messrs. R. Wallace and Co., Colchester, had Liliums, Calochorti, Irises, and other hardy flowers in attractive variety. Messrs. Kelway & Sons, Langport, staged some magnificent spikes of Delphiniums with Pæonies and Gaillardias. A fragrant group was that from Messrs. H. Cannell & Sons, Swanley, as it comprised fifteen varieties of Stocks. A background of excellent Aquilegias showed up the fine spikes of the Stocks.

Messrs. G. Jackman & Son, Woking, exhibited cut Roses and hardy flowers, and made a bright display. Mr. H. B. May, Upper Edmonton, showed a very fine collection of Selaginellas, including fifty species and varieties. Messrs. Paul & Son, Old Nurseries, Cheshunt, arranged a group of Pæonies, but here again sufficient space was not available, and individual varieties could not be properly distinguished. Messrs. J. Veitch and Sons, Ltd., Chelsea, staged some grand plants of Canterbury Bells, with beautiful cut flowers of Pæonies, Irises, and Gladioli. Mr. J. Russell, Richmond, sent diversified trees and shrubs, which came as a pleasant relief for the eye after the brilliance of the flowers. Mr. J. Fleming, gardener to Sir C. Pigott, Bart., Wrexham Park, Slough, sent Crotons with splendid plants of *Humea elegans*. Messrs. B. S. Williams & Son, Upper Holloway, arranged a small group of Carnations.

Messrs. W. Cutbush & Sons, Highgate, showed some excellently grown Malmaison and border Carnations backed by Bamboos and fringed with Ferns. Calla Elliottiana was also represented. Mr. F. G. Foster, Brockhampton, sent Sweet Peas in close bunches. The varieties were well diversified. Mr. M. Prichard, Christchurch, contributed *Orchis foliosa*, *Philadelphus Lemoinei erectus*, *Kniphofia caulescens*, with *Nymphæas* and *Nepeta Mussini*. Mr. J. Douglas, Great Bookham, exhibited Carnations that were characterised for quality rather than quantity. Messrs. Watkins & Simpson, Exeter Street, Strand, showed a collection of dwarf Lantanas. Messrs. J. Veitch & Sons staged *Escallonia langleyensis* grandly flowered, *Styrax japonica*, *Cæsalpinia japonica*, *Abelia triflora*, *Philadelphus microphyllus*, and *Retinospora obtusa alba Mariesi*.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, H. Ballantine, C. Winn, W. Cobb, J. Colman, H. T. Pitt, G. Hill, J. G. Fowler, A. H. Smea, H. M. Pollett, W. H. Young, W. H. White, J. Douglas, S. Courtauld, de B. Crawshay, H. Little, A. Outram, H. J. Chapman, J. Jaques, J. T. Gabriel, and T. B. Haywood.

Messrs. J. Veitch & Sons, Ltd., Chelsea, occupied their customary position on the Orchid table, but did not show a very large group. Cattleyas and Lælias formed the backbone of the display. Messrs. B. S. Williams & Son, Upper Holloway, contributed a group of Orchids, in which *Cypripediums*, Lælias, *Odontoglossums*, and Cattleyas were conspicuous. Mr. W. Whiffen, gardener to J. Bradshaw, Esq., The Grange, Southgate, sent a bright little group, the effect of which would have been improved by the addition of a few small Ferns. Messrs. H. Low & Co., Bush Hill Park, showed Orchids, Cattleyas being particularly fine, as was a flower of *Cypripedium callosum* Sanderæ.

Mr. Walters, gardener to Lieut.-Colonel Shipway, Grove House, Chiswick, showed a few Orchids in creditable condition. Messrs. Stanley Mobbs & Ashton, Southgate, sent a bright group of Orchids. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart. Dorking, showed *Catasetum fimbriatum superbum*, *Cattleya Mossiæ Lawrenceæ*, *Lælia tenebrosa atrata*, and *Odontoglossum crispum purpurascens*. Mr. H. Cooke, gardener to de Barri Crawshay, Esq., Sevenoaks, sent *Odontoglossum crispum Cherubim* and *O. c. Seraphim*. Exhibitors of a few plants of Orchids, in addition to those named, were numerous.

MEDALS.—Fruit Committee.—Silver-gilt Knightian medal to Messrs T. Rivers & Son; silver Knightian medal to Mr. T. Coomber; and bronze Banksian medal to C. A. Pearson, Esq. Floral Committee.—Silver-gilt Flora medal to Mr. E. Beckett; silver-gilt Banksian medal to Mr. J. Fleming; silver Flora medals to Messrs. J. Veitch & Sons, W. Paul and Son, and R. Wallace & Co.; bronze Flora medals to Messrs. F. G. Foster, Watkins & Simpson, Dobbie & Co., Jackman & Son, and H. Cannell and Sons; silver Banksian medals to Messrs. H. B. May, Cutbush and Son, M. Prichard, Kelway & Son, and Barr & Sons; bronze Banksian medals to Messrs. Paul & Son and J. Russell. Orchid Committee.—Silver Banksian medals to Messrs. J. Veitch & Sons, H. Low & Co., J. Bradshaw, and S. Mobbs & Ashton.

CERTIFICATES AND AWARDS OF MERIT.

Carnation Lady Gerard (H. Walters).—A large flower, pale cream in colour. The petals are broad, but the flower is scentless (award of merit).

Carnation Trojan (J. Douglas).—The petals of this white variety are well-nigh perfect, as is the form of the flower (award of merit).

Cattleya Eudora eximia (J. Veitch & Sons).—A superb Cattleya, and undoubtedly one of the finest varieties of Eudora that has ever been shown (first-class certificate).

Cattleya Gaskelliana formosa (J. Veitch & Sons).—A delicately beautiful Orchid. The colour over all is very pale bluish. There is a touch of purple in the centre of the lip, and the throat is yellow (award of merit).

Cattleya Mossiæ Lawrenceæ (W. H. White).—This is a charming form. The sepals and petals are white, as is the fringed margin of the lip. The central portion is pale purple-rose, and the side lobes yellow (award of merit).

Davallia Illustris (J. Veitch & Sons).—A graceful Fern, whose broad, light green, much-divided fronds are carried on stout footstalks, about 18 inches high (first-class certificate).

Delphinium Sir Walter Scott (Kelway & Son).—A magnificent spike of large flowers. The colour is purple and royal blue (award of merit).

Dracana indivisa Schneideri (J. Veitch & Sons).—A plant that is sure to attain great popularity. The leaves are dark green, with a crimson midrib; they are about 15 inches long (first-class certificate).

Lælia tenebrosa Victor Warburton (A. Warburton).—The sepals and petals are chrome yellow, the lip being white on the front lobe, and crimson rose on the centre and side lobes (award of merit).

Lælio-Cattleya Dominiana Fire King (Mrs. Briggs-Bury).—One of the handsomest varieties that has been exhibited; the colour is exceptionally rich (first-class certificate).

Masdevallia Rushtoni (G. C. Hincks).—An upright-growing hybrid, that resulted from a cross between *M. racemosa* and *M. ignea Eckhautei*. The colour is orange, with rich crimson veins (award of merit).

Odontoglossum crispum purpurascens (W. H. White).—A splendidly shaped flower. The ground is white flushed purplish rose, and having numerous brown spots (award of merit).

Odontoglossum crispum Seraphim (De Barri Crawshay).—A magnificent pure white variety; it is probably one of the best that has been staged (first-class certificate).

Odontoglossum Harryano-crispum (W. H. Young).—A superb hybrid between the parents named. The sepals and petals are white edged rose, and with immense blotches and spots of bright brown. The magnificent lip is of similar colour (first-class certificate).

Pelargonium Fire Dragon (E. S. Towell).—A peculiar flower, resembling a Cactus Dahlia in shape. The colour is brilliant scarlet (award of merit).



ODONTOGLOSSUM ADRIANÆ ASHWORTHIANUM.

ON Tuesday, June 13th, Mr. H. Holbrook, gardener to E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, exhibited at the Drill Hall *Odontoglossum adrianæ ashworthianum*, to which a first-class certificate was recommended by the Orchid Committee of the Royal Horticultural Society. The spike carried three flowers, one of which is represented in the illustration (fig. 120). The flower depicted is of natural size. The form of the flower is perfect, and the spotting on the whole surface of exceptional beauty. The ground colour is white, but this is almost obscured by the numerous light brown spots and occasional blotches. The variety thoroughly deserved the high award, as it is far superior to the type.

ODONTOGLOSSUM CRISPUM AUGUSTUM.

In the collection of Orchids that Mons. Jules Hye, Leysen, sent to the Temple Show, there were several plants of more than average merit; but one, *Odontoglossum crispum augustum* (fig. 121), stood out in conspicuous beauty. It is, as a matter of fact, amongst the handsomest of the dark spotted varieties of this beautiful Orchid, and it is certain to attract a great amount of attention on the comparatively rare occasions on which it is exhibited. As may be seen in the woodcut, the flower is of considerable size, and has immense blotches on sepals, petals, and lip. These are chocolate in colour, and show up splendidly from the white ground. *O. c. augustum* received a first-class certificate from the Royal Horticultural Society some years ago. It will be remembered that Mons. Hye was awarded a gold medal on this occasion for his plants, which were somewhat closely packed into a glass case.

ONCIDIUMS.

There is probably no more useful genus of Orchid than *Oncidium*s, as the flowers in many cases are singularly beautiful, and there are members of the genus flowering in every month of the year. Although the different plants show much variation, there is such a strong family likeness that it is usually easy to determine whether a plant belongs to the genus or not. From the immense branching panicles of tiny flowers produced by *O. divaricatum*, for instance, to the long wiry peduncle and single large flower of the Butterfly *Oncidium*, *O. lapilio* and *O. kramerianum* is a far cry, yet anyone experienced in Orchids could tell them at a glance as *Oncidium*s.

Of quite a different calibre is the pretty *O. cucullatum* and its many varieties, as *O. c. nubigenum* and *O. c. phalenopsis*, and these in their turn are distinct from the section containing such plants as *O. tetrapetalum* and *O. pulchellum*. The showy Brazilian kinds, with the *O. crispum* habit comprise many beautiful species that not

only make a fine display, but last in flower over a very long season. In the cool house, scandent flowered group, it is only necessary to name the popular and beautiful *O. macranthum* and its many allies.

Few other genera can be said to contain such varied and useful species, and as by far the larger number of these are of easy



FIG. 120.—ODONTOGLOSSUM ADRIANÆ ASHWORTHIANUM.

culture no other is to be so strongly recommended to the amateur or beginner in Orchid culture. Coming as they do from such a wide expanse of country no system of procedure can be laid down for all alike, but notes on the most popular kinds frequently appear in the *Journal of Horticulture*. Geographically, *Oncidiums* cover very much of the same ground as *Epidendrums*, and in Linnæus' time the few species then known were classed, as were all known exotic kinds, in the latter genus.—H. R. R.

TROPÆOLUM SPECIOSUM.

I WAS in a wonderfully lovely Surrey garden recently, one I may not name, where *Tropæolum speciosum*, the famous Flame Flower, had beside the north wall of the mansion and in other places become a weed, and gave no end of trouble to keep it restricted. It was a few years since established by planting roots. I brought away some pieces of root and growth, and have planted them in my back yard beneath a north fence, but fear I may not induce it to grow; the change, from a sweet sandy loam in a very lofty garden in the purest air, to our Kingston atmosphere is so great. In the country garden on nets hung on wires fixed to the walls the stems will run up to a height of 15 feet and become a glorious mass of scarlet flowers. It is evident, judging by this case, that given shade, cool temperature, suitable soil, and a sweet atmosphere the Flame Flower is not difficult to establish by roots.—A. D.

I HAVE been interested in the various notes on this beautiful creeper lately appearing in your columns. I have never had any difficulty in establishing it in shady places in the south (Mid-Sussex). On several occasions I procured roots from a parson's garden about two miles from the sea in Banffshire, where the gardener, thirty years ago, had more than he wanted of it, speaking of it as "that confounded weed." On receiving the roots I cut or break them into pieces about 2 or 3 inches long, and lay them on the soil in 5-inch pots two-thirds filled, and cover with an inch of soil. The pots are stood in any cool house or frame and kept moist. They will, treated thus, appear above the soil some weeks earlier, and should have some twigs placed in the pots for them to cling to. I place out early in May, the plants then generally being 6 or 8 inches above the soil. Some that were treated in this way last spring grew to the top of a 9 foot wall (north aspect), and bloomed in September. Last year's growth survived the winter and started afresh 4 and 5 feet from the ground, and in a short time will be a mass of bloom.

Some few pieces of roots planted by the side of my cottage last March are only now making their appearance, which shows what an advantage there is in giving them a start in pots. My experience is that this plant does best in a free, open soil, and where there is no danger of stagnant water about its roots.—R. I.

"FAMILIAR WILD FLOWERS."—This useful book has now reached midstream, and we still find the same general excellence in text and coloured plates. Parts 12 and 13 comprise Yarrow, Charlock, Forget-me-not, yellow Loosestrife, Coltsfoot, Stonecrop or Wall Pepper, Feverfew, yellow or Mountain Poppy, Wall Pennywort, Pimpernel, Corn Marigold, Kidney Vetch, Saintoin, Nipplewort, common Rock Rose, Moneywort, Field Scabious, yellow Water Lily, Meadow Saxifrage, and Thrift.

SHOWS.

OXFORD.—JUNE 20TH.

THE annual show of the Royal Oxfordshire Horticultural Society was held in the beautiful gardens of Trinity College. Instead of single or sets of specimens, groups covering a specified number of superficial feet have been substituted this year in the framing of the Oxford schedule, and appear to meet the popular taste. The plants, flowers, and fruit filled two large tents, representing an area of something like 5000 superficial feet of staging space, the whole of the vegetables being ranged outside on the shady side of the south lawn. The exhibition was regarded (says the "Oxford Chronicle") as altogether superior to any held in recent years, the non-competitive exhibits greatly conducing to that end.

Among the specially noticeable productions was the 180 feet of tabling filled with rare and choice plants from the Chelsea nurseries of J. Veitch & Sons, the collection embracing good examples of Gloxinias, the yellow *Calla Elliottiana*, *Acalypha hispida*, *Caladiums*, *Dracænas*, *Streptocarpus*, *Crotons*, *Nidulariums*, and *Orchids*, first-class certificates being awarded to a collection of blooms of the *Rhododendron javanico-jasminiflorum*. The above were included in the group to which a very high cultural commendation was awarded. Messrs. Tucker & Sons staged several floral designs, and were commended; the Oxford Fruit and Nursery Company, wreaths and other designs of cut flowers, and Messrs. Perry, Banbury, exhibited bouquets and wreaths. Messrs. E. Webb and Sons showed Sweet Peas arranged in neat vases. Mr. C. Turner, Royal Nurseries, Slough, sent a collection of named seedling border Carnations, securing a cultural commendation. Mr. T. Whillans, Blenheim Palace Gardens, presented Malmaison Carnations, and a seedling variety named Oxford Yeoman of a deep crimson colour. A double white tuberous *Begonia* was staged by Mr. F. Clarke, gardener to Mr. M. Wooten, Cross Ways, of a snow white colour, circular outline; an attractive flower raised by the exhibitor.

In the competition open to all England, the groups of stove and greenhouse plants, arranged for effect, proved centres of much attraction, the allotted area, 220 feet, being tastefully set out with rare and valuable plants, the £12 prize going to Mr. Cypher, Cheltenham, whose arrangement comprised a large central *Kentia*, surrounded by Bamboos, neat *Cocos*, *Aralias*, and finely coloured *Crotons*, the outer portions of the design forming four arches, on which were arranged *Orchids* and fine-foilage plants, with a groundwork of Ferns, *Orchids*, *Crotons*, and *Tuberose*s. The second prize group, from Leamington, was well furnished with choice plants, and possessed a large amount of artistic skill. Groups of *Orchids*, filling 72 feet superficial, were immensely attractive, Mr. Cypher leading, the chief kinds being *Lælias purpurata* and *tenebrosa*, *Cattleyas Mendeli* and *Mossiae*, *Oncidium sarcodes*,

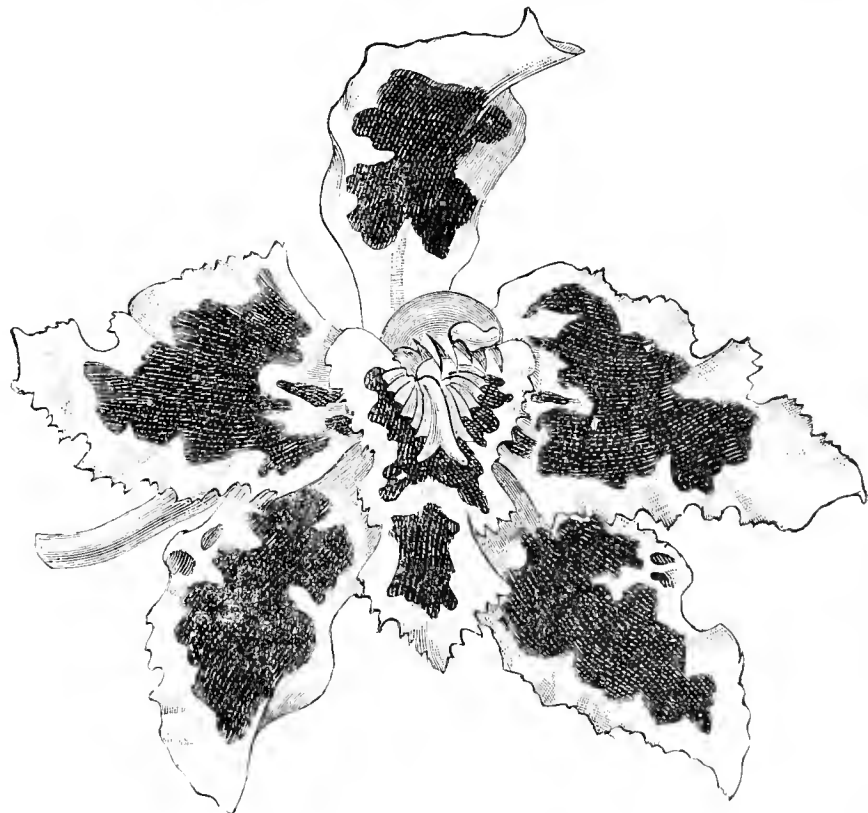


FIG. 121.—ODONTOGLOSSUM CRISPUM AUGUSTUM.

Odontoglossum crispum, *O. Pescatorei*, *Miltonia vexillarium*, and *Dendrobium Dalhousianum*. Mr. Bever's second prize exhibit was a lovely collection of choice forms.

The displays of Roses were generally admired, the taste observable in the group sent from Blenheim Gardens being most noteworthy. The second and third cards fell to very attractive arrangements largely composed of Tea Rose buds. Tuberous *Begonias* were shown best by Mr. Johnson of Garsington, whose group, covering 96 superficial feet, was notable for the general good quality of the blooms and bright colours. The tables "decorated and laid as for dinner" proved a good class, the premier arrangement, having a miniature *Cocos* as a centre, pale rose-coloured Sweet Peas and grass with trailing *Smilax*; the second card went to a very showy design, its centre a neat feathery *Cocos* set in a mound of *Orchid* blooms, Rose buds, and Fern fronds; the third prize being a pretty arrangement of yellow Spanish Iris.

In the members' classes, the groups of plants arranged on 120 feet superficial proved much more attractive than did the sets of six specimens of past years. There were three good groups, the premier coming from Mr. W. Bastin, Buscot Park, and contained Carnations Germania, Edith Pope, and W. Robinson, whilst among the Orchids was a very fine piece of *Oncidium sphacelatum*, Palms, Ferns, and decorative plants forming the groundwork. Messrs. Walker, Thame, and Johnson, Garsington, were strong with single and double Zonal "Geraniums," their specimens being healthy and full of flower. Fuchsias were limited to one exhibit of six plants from Mr. J. Mattock, who staged tall pyramidal well-flowered plants; and the exotic and hardy Ferns were equal, if not superior, to those usually seen at the large shows of June. Gloxinias were represented by three collections of six varieties, those from Headington Hill bearing large flowers of exquisite beauty. The specimen plants included an immense example of *Phormium tenax*, *Bougainvillea glabra*, Palms, and a showy plant of *Anthurium* furnished with several dozen spathes. The four groups of Carnations were quite a feature, and though each was good in its way, the Malmaisons from the Blenheim gardens were particularly noteworthy.

Among the cut flowers specimen Roses have lost none of their charm, the boxes of Tea-scented from Longworth Rose Farm, and New Headington Rosery contained very fine specimens. Mr. Prince was placed first for twenty-four and eighteen varieties of Teas; in the latter class he had large blooms of Innocent Pirola, Mons. Furtado, A. S. Gray, Mrs. W. J. Grant, white Maman Cochet, Caroline Testout, Hon. Edith Gifford, Rubens, Princess of Wales, Madame Cusin, The Bride, Souvenir de S. A. Prince, Souvenir d'un Ami, Souvenir d'Elise Vardon, The Bride, Madame de Watteville, and Anna Ollivier.

Bouquets and ladies' sprays were well represented. Zonal "Geraniums" in triplet trusses made a brilliant display, and Pyrethrums were well represented. The old-fashioned florists' Pink has no class provided for it at this show, but a stand of a seedling white Pink was staged from Bradwell Grove, a large form, evidently of Mrs. Sinkins.

Fruit, though not an extensive feature, was an excellent display. For white Grapes Foster's Seedling took the cards, while for black the Hamburgs were awarded the three prizes. Strawberries Royal Sovereign were selected as deserving all the honours, being berries of immense size and well coloured. Peaches were Bellegarde and Royal George, and Elruge and Lord Napier proved the ripest forms of the Nectarines. Melon Sutton's Jubilee took first prize, Beauty of Syon second, and Hero of Lockinge third. Only one dish of Cherries was in competition. These were Governor Wood, and hailed from Maiden Erlegh Gardens.

Vegetables were simply a grand show in themselves, there being no less than seventeen collections of from six to eight varieties in each, including the finest Cucumbers, Tomatoes, Potatoes, Peas, and Carrots ever seen at a June show in this district. Amateurs are generally discounted owing to the vagaries of the season, but the productions staged by them were of good average quality.

SHANKLIN.—JUNE 21ST.

THE annual exhibition of Roses, in connection with the Isle of Wight Rose Society, was held at Shanklin on Wednesday, June 21st. The number of entries was in excess of last year; whilst the standard of excellence was superior to that of any previous season.

The prizewinners in the open classes were, for twenty-four Roses, distinct varieties, Messrs. B. R. Cant, first; G. Prince, second; and Prior and Son, third. Twelve distinct Teas or Noisettes, Messrs. F. Cant & Co., first; B. R. Cant and G. Prince, equal second. Eight distinct, three trusses of each, Messrs. G. Prince, first; D. Prior, second; and F. Cant and Co., third. Twelve of any one variety, Messrs. G. Prince, first; B. R. Cant, second; and Paul & Son, third. Twelve bunches of garden Roses, Messrs. Paul & Son, first; B. R. Cant, second; and F. Cant and Co., third.

Miss Carter, Mr. R. E. West, and Rev. G. E. Jeans were the principal prizewinners in the classes open to all amateurs, whilst in the Isle of Wight classes Mr. J. Lee-White, E. Cowes, secured the cup for twenty-four distinct Roses, and from the same stand he obtained the silver medal for the best H.P. with Mrs. Sharman Crawford, and the silver medal for the best Tea with Medea. For the latter bloom he also obtained the I.W. Horticultural Improvement Association's certificate for cultural merit. Mr. J. Lee-White was also successful in gaining the Queen's gold medal for twelve distinct Roses. Mrs. Croft-Murray, Ryde (gardener, G. H. Kent), was successful in winning the silver-gilt medal for twelve distinct Teas.

The other successful exhibitors in the Isle of Wight classes were Lady Hammond Graeme (gardener, Mr. B. Grist), Rev. G. E. Jeans (gardener, Mr. A. Hill), Mr. J. O. Brook (gardener, Mr. W. Spragg), Miss Carter (gardener, Mr. G. Kent), Mrs. Mainwaring (gardener, Mr. W. Burden), Lady Daly (gardener, Mr. G. Honeybourne), Rev. C. W. Heald (gardener, Mr. H. Chiverton), Rev. A. T. Richardson (gardener, Mr. F. Carben), and Mr. Geo. Williams.

For table decorations Mrs. Kent was first and Miss Gordon second. Mr. B. R. Cant was successful in obtaining the I.W. Horticultural Improvement Association's certificate for cultural merit with Rose Gustave Piganeau. Mr. G. Prince obtained a certificate for a new or rare variety with Alexander Hill Gray, a Rose which promises to be an acquisition to the exhibition varieties. A similar award was also given Mr. G. W. Piper for Sunrise, a variety which was the admiration of all. The Show, on the whole, was one of the most successful ever held, and reflects great credit to the Honorary Secretaries, the Rev. G. E. Jeans and Mr. E. V. Matthews, whose excellent arrangements were carried out without a hitch.

WINDSOR.—JUNE 24TH.

THE eighth annual exhibition was held during fine weather. Her Majesty the Queen visited the Show during the afternoon. The splendid group of Orchids sent by Baron Schröder of The Dell, Egham, attracted much attention from all. *Lælio-Cattleya* Lady Wigan, *Cypripedium callosum* Sanderæ, *Brassavola Digbyana*, *Odontoglossum crispum* var. Lord Sherborne, *Vanda teres*, *Bulbophyllum barbigerrum*, *Dendrobium Deari*, D. McArthur, *Lælio-Cattleya Canhamiana* and *Disa Veitchi*, with many showy *Cattleyas* and *Masdevallias*, were conspicuous. Messrs. F. Sander & Co., St. Albans, contributed new and rare plants and a few Orchids. Messrs. J. Veitch & Sons, Ltd., had a pretty display of hardy flowers and plants. Messrs. R. Wallace & Co. of Colchester had a group of hardy bulbous plants, which was very much admired by everyone. Mr. C. Turner, the Royal Nurseries, Slough, sent *Pelargoniums* and dwarf Roses in pots. Messrs. W. Cutbush & Son of Highgate, had a grand group of Carnations. Mr. H. Titt contributed bouquets of Orchids, Sweet Peas, and Roses. The local classes were very interesting.

In the open class for the Queen's cup, for forty-eight distinct, Mr. Benj. R. Cant, Colchester, was awarded first prize with fresh flowers of Helen Keller, Hon. Edith Gifford (the premier flower in the open class), Caroline Testout, Général Jacqueminot, Marchioness of Downshire (fine), Tom Wood, Ernest Metz, Capt. Hayward, Golden Gate, Mrs. J. Laing, Comtesse de Nadaillac, Dr. Sewell, Etienne Levet, Kaiserin Augusta Victoria, François Michelin, Marchioness of Dufferin, La France, Bridesmaid, Gustave Piganeau, Mrs. R. G. S. Crawford, Marechal Neil, Souvenir de S. A. Prince, A. K. Williams, Marie Verdier, Madame Cusin, Muriel Grahame, Cleopatra, Margaret Dickson, Mrs. W. J. Grant, and others. Second prize, Messrs. D. Prior & Son, Colchester, who had some very fine flowers. Third, Messrs. F. Cant & Co., Braiswick Nursery, Colchester. This stand contained a grand flower of Marchioness of Downshire, which won the silver medal. Fourth prize, Mr. George Prince, Oxford.

For eighteen Teas or Noisettes, single trusses, Mr. George Prince, Oxford, led the way with grand blooms of Comtesse de Nadaillac, Souvenir de S. A. Prince, Catherine Mermet, Marechal Niel, Maman Cochet, Souvenir d'Elise, Niphotos, Madame de Watteville, The Bride, Souvenir d'un Ami, Golden Gate (grand), Madame Hoste, Princess of Wales, Medea, White Maman Cochet, Etoile de Lyon, Madame Cusin, and Margaret Grahame. Second, Messrs. Frank Cant & Co., with good flowers. Third, Messrs. D. Prior & Son. Twelve distinct, three trusses of each.—Mr. Charles Turner was an easy first with superb flowers. Second, Messrs. D. Prior & Son. Third, Mr. B. R. Cant. Twelve single trusses, H.P. or H.T., one variety.—Mr. C. Turner was a good first with Mrs. J. Laing. Third, D. Prior & Son. Twelve single trusses of Tea or Noisette.—Second, Messrs. D. Prior & Son, with Souvenir de S. A. Prince. Third, Messrs. Frank Cant & Co., with Souvenir d'Elise.

In the amateurs' class for twenty-four distinct, single trusses, R. E. West, Esq., was first; C. Romaine, Esq., The Priory, Old Windsor, second; and P. Burnand, Esq., third. Six single trusses, one variety.—First, C. Romaine, Esq., and second, R. E. West, Esq. Twelve Teas or Noisettes, single trusses, not less than eight varieties.—First, P. Burnand, Esq.; second, C. Romaine, Esq.; and third, W. E. West, Esq. Six distinct, three of each.—First, R. E. West, Esq.; second, C. Romaine, Esq.; and third, P. Burnand, Esq.

WESTMINSTER.—JUNE 27TH.

THE Rose Show, held jointly by the National Rose Society and the Royal Horticultural Society, was held in the Drill Hall, and made a fine display, the garden Roses being especially conspicuous, and they appeared to be very popular with the visitors. There was a keen competition for twenty-four single trusses, and the adjudication gave the judges a considerable amount of trouble; ultimately Mr. B. R. Cant, Colchester, was placed first with a good even stand. The varieties were:—Back row, reading from left to right: Helen Keller, Gustave Piganeau, White Lady, Duchesse de Morny, Mrs. J. Laing, Crown Prince, Lady Mary Fitzwilliam, and Ulrich Brunner. Middle row: Dr. Sewell, Catherine Mermet, Sultan of Zanzibar, Madame de Watteville, Tom Wood, Comtesse de Nadaillac, A. K. Williams, and Madame G. Luzet. Front row: Marchioness of Downshire, Prince Arthur, Maman Cochet, Fisher Holmes, Mrs. Cocker, Dupuy Jamain, Muriel Grahame, and Mrs. W. J. Grant. Messrs. D. Prior & Son, Colchester, came second with a good exhibit. The best blooms were Gustave Piganeau, Mrs. J. Laing, Rev. A. Cheales, Caroline Testout, Helen Keller, Captain Hayward, Mrs. R. S. Crawford, Lady Mary Fitzwilliam, and La France; and Mr. F. Cant, Colchester, was third with good flowers of Gustave Piganeau, La France, Mrs. W. J. Grant, Mrs. J. Laing, and Kaiserin Augusta Victoria.

For eighteen distinct trusses (amateurs) Mr. O. G. Orpen, West Bergholt, Colchester, achieved a noteworthy success over seven competitors with a delightful exhibit. The varieties were Marquis Litta, Charlotte Guillemot, Maman Cochet, Rubens, Anna Olivier, and White Lady. Second row: Marechal Niel (grand), Mrs. W. J. Grant, Lady Mary Fitzwilliam, Charles Darwin, Souvenir d'Elise Vardon, and Horace Vernet. Front row: Rainbow, Souvenir de S. A. Prince, Captain Hayward, Danmark, Margaret Dickson, and Souvenir d'un Ami. Mr. T. B. Haywood, Woodhatch Lodge, Reigate, was placed second with charming blooms of Gustave Piganeau, Marquis Litta, Mrs. W. J. Grant, and Kaiserin Augusta Victoria; and Mr. E. M. Bethune, Denne Park, Horsham, third, with a good exhibit; the best flowers were Mad. Gabriel Luizet, Kaiserin Augusta Victoria, Caroline Testout, and La France.

For eighteen distinct trusses (open) Mr. C. Turner, Nurseries, Slough, was placed first with a heavy stand; the varieties were Mrs. J. Laing,

Gustave Piganeau, Her Majesty, Ulrich Brunner, Caroline Testout, Prince Arthur, Comtesse de Ludre, Mrs. Crawford, Xavier Olibo, Helen Keller, Maurice Bernardin, François Michelin, Mrs. Grant, Duke of Wellington, Clio, Général Jacqueminot, Antoine Rivoire, and Madame G. Luizet. Messrs. J. Burrell & Co., Cambridge, came second with a good board. The best flowers were Marquis Litta, Lady Mary Fitzwilliam, Mrs. J. Laing, Bridesmaid, and White Lady.

For twelve single trusses (amateurs) Mr. G. W. Cook, North Finchley, was first with Mrs. J. Laing, Captain Hayward, La France, Marquis Litta, Général Jacqueminot, Mrs. Crawford, Souvenir de President Carnot, Mrs. W. J. Grant, Madame Gabriel Luizet, Chas. Lefebvre, Medea, and Louis Van Houtte. Mr. W. Kingston, Bedford, was second; and Mr. R. W. Bowyer, Haileybury College, Hertford, third.

For six single trusses, Miss B. H. Langton, Hendon, was first with a beautiful exhibit; Mr. J. Bateman, Archway Road, Highgate, came second; and Mr. G. H. Blaxton, Brentwood, third. For nine trusses, one variety, Mr. P. Burnand, Reigate, was placed first with Mrs. Sharman Crawford; Mr. T. B. Hayward was second with a good stand of Mrs. J. Laing; and the Rev. Page Roberts, Scole, was third with Madame G. Luizet. For six trusses, one variety, Mr. G. W. Cook was first with Mrs. W. J. Grant; Mr. E. M. Bethune, Horsham, was second with Kaiserin Augusta Victoria.

There was a grand competition in the class for eighteen trusses of Teas and Noisettes, but Messrs. D. Prior & Son were to the fore with Innocente Pirola, Maman Cochet, Rubens, The Bride, Cleopatra, Souvenir de S. A. Prince, Catherine Mermet, Marie Van Houtte, Souvenir d'un Ami, Maréchal Niel, Madame Watteville, Caroline Kuster, Comtesse de Nadaillac, Madame Cusin, Jean Ducher, Alba Rosea, Medea, and Souvenir d'Elise. Mr. G. Prince, Oxford, was second with noteworthy examples of Comtesse de Nadaillac, Maréchal Niel, Muriel Grahame, and Bridesmaid.

For eighteen single trusses the Rev. F. Page Roberts was successful with a good even stand. The best blooms were Golden Gate, Madame Cusin, Muriel Grahame, The Bride, and Comtesse de Nadaillac. Mr. O. G. Orpen was second with Catherine Mermet, Cleopatra, Empress Alexandra of Russia, and Anna Olivier. Mr. Conway Jones, Hucclecote, Gloucester, was placed in the front rank for twelve trusses. The best blooms were Maréchal Niel, Golden Gate, The Bride, and Ethel Brownlow. The Rev. A. F. Melliar, Sproughton Rectory, Ipswich, was second. There were ten competitors for six varieties, and the first place was secured by the Rev. F. R. Burnside, St. Margaret's Bay, Dover; Mr. H. P. Landon, Shenfield, Brentwood, was second. For nine trusses, one variety, Mr. O. G. Orpen was first with good blooms of Maréchal Niel. Mr. H. P. Landon was first for six trusses, one variety, with Anna Olivier, and Mr. B. H. Langton second with the Hon. Edith Gifford.

The garden Roses made quite a show in themselves. For thirty-six varieties Messrs. G. Cooling & Sons, Bath, were placed first with a grand exhibit; Messrs. G. Paul & Son, Cheshunt, were second with a beautiful exhibit. For eighteen distinct varieties Mr. A. Tate, Leatherhead, was first with a superb exhibit; Mr. F. W. Campion, Reigate, was second; and the Rev. J. H. Pemberton third.

ROSE SHOWS.—We have been compelled, owing to pressure on our space, to keep the reports of Croydon, Richmond, and Southampton Shows until our next issue.

THE YOUNG GARDENERS' DOMAIN.

EXHIBITION VEGETABLES.

(Continued from page 520.)

POTATOES for exhibition require thorough preparation. As soon as possible after being dug the seed should be selected and placed on end in shallow boxes, with the eyes upwards, in a frost-proof place, where plenty of fresh air and light can be admitted. These must be examined occasionally, and all except two shoots rubbed off; and when required for planting, select the better of these two only. Choose a piece of ground that was well manured for a previous crop, say where Celery was grown, trench deeply, adding leaf soil and fresh lime as the work proceeds. The rows must be quite 3 feet apart for the strongest growers, and the sets may be placed 20 inches to 2 feet asunder in the rows. In some gardens the Potatoes when dug are scabby; to prevent this cover the seed with burnt garden refuse when planting. When lifting the crop select those of perfect form, carefully wash, and store in boxes in a dark place until required for the show.

Seeds of Onions for exhibition should be sown in January in boxes. When the seedlings are large enough prick out 2 inches apart into other boxes, keeping them close to the glass, in a temperature of 55° to 60°, until the growth advances, when they must be gradually hardened, and planted out 15 inches apart each way in March if the weather is favourable. Some growers pot them, instead of planting direct from boxes. If large bulbs are required for kitchen uses, or if the Onion fly is an annual trouble, the former method will be found to answer admirably, provided the ground has been thoroughly enriched and trenched 2 feet deep. Even then liquid manure from the cow stalls should be regularly applied to grow bulbs over 3 lbs. in weight.

Seeds of Cauliflowers sown at the middle of February in boxes or on hotbeds will be quite early enough for the first summer shows. But the safer way is to sow a little seed often, then if the plants form heads too early for a given date, lift them, and store in the coolest cellar at command. When the "flower" is forming, tie the leaves over the top, as by this method white heads are obtained. The site selected for the plants must

be thoroughly trenched, and decayed manure incorporated. Place the plants in rows 3 feet apart and 2½ feet asunder in the rows, giving abundance of liquid manure if obtainable. All the Brassica family require deep rich soil and similar treatment, varying the distances between the plants.

To grow good exhibition roots of Carrots and Parsnips the ground should be trenched early in the autumn, using little or no manure, this being governed by the system adopted for the previous crop. Early in March—if the soil is workable—the first opportunity should be taken to make the soil very firm, sowing the seeds without delay in the following manner. Make of wood a good model of a Parsnip, and 2 feet from the bottom attach a crosspiece, so that both feet may be used to force it into the earth. As a preliminary to this use an iron bar to make the holes, so as to facilitate the insertion of the model to the required depth. The holes should be made 15 inches apart, and the lines or rows 18 inches, and they must be filled with light rich fine soil, and two or three seeds sown in the centre of each. When these have germinated, and the plants are large enough, the best should be retained for growth. The wooden model used for the Carrots may be a size smaller, and the holes made a few inches closer together. Use the Dutch hoe frequently, particularly in dry weather.

To produce the best Leeks it is absolutely necessary to have 2 feet depth of soil thoroughly prepared and enriched by good farmyard manure. The seeds should be sown and treated in a similar way to that advocated for Onions, with the exception that it does not require to be sown so early—about a fortnight later will suffice. Some growers pot the plants, but this method cannot be general among exhibitors, room and time being too precious at the period they require repotting. When transferred to the quarter chosen, plant in lines 2 feet asunder, and 20 inches apart. Plant deeply, keeping the soil out of the crowns of plants. They may also be planted in trenches like Celery, and liquid manure liberally applied.

To produce Beet for exhibition the seeds should be sown in April, and when the seedlings appear they must be protected from frosts. The soil should be rich and well cultivated, but add no manure; this should have been given for the previous season's crop of some other vegetable. Thin the plants to 15 or 18 inches apart each way, and water thoroughly in dry weather.

Turnips require sowing at monthly intervals from the end of February (outside) on a warm border in similar soil to that advised for Beet. Choose showery weather, and if dry the drills must be watered beforehand, and these should be 15 inches apart, and the plants thinned to 1 foot asunder.—FOREMAN X.



FRUIT FORCING.

Vines.—*Early House*.—The Vines from which the Grapes have been cut must be well syringed every evening until thoroughly freed from red spider, and afterwards occasionally to preserve the old foliage as long as possible in a healthy condition, for when the leaves die early second growth not infrequently sets in when the Vines ought to be going to rest. Admit air to the fullest extent possible, and maintain a moderate degree of moisture in the border, particularly at the surface, so as to keep the roots there instead of allowing it to become dry, and so causing them to descend in quest of moisture. A moderate extension of the laterals will not do harm, but irregularities of growth, and particularly gross ones, should be checked by pinching, or be entirely removed.

Grapes Ripening.—A fair amount of atmospheric moisture should be maintained both for the benefit of the foliage and the swelling of the fruit, which enlarges considerably during the ripening process. Give the inside borders, and the outside as well if the weather be dry, a good soaking of tepid water or liquid manure, and mulch at once with about 2 inches of rather dry but short sweet litter. This will mostly be sufficient for perfecting the Grapes, but the Vines must not suffer from drought at the roots, or the berries will be liable, especially Muscats, to shrivel. Directly they begin to colour afford abundance of air, a little fire heat being essential to their higher perfection, especially in flavour, insuring a circulation of warm air, but allow the temperature to fall to 65° at night, otherwise securing by artificial means a temperature 70° to 75°, and 80° to 85° through the day for Black Hamburgs and similar varieties. Muscats should have a night temperature of 70° to 75°, 80° to 85° by day, up to 90° or 95° from sun heat.

Grapes Stoning.—The weather recently has been favourable for scorching and scalding. The best means of preventing both is a rather high night temperature, early and free ventilation by day, with a little at night. It is not advisable to close early at this critical period—the close of the stoning process, but do so carefully, and as the liability to scalding does not extend over more than a fortnight or three weeks, particular attention should be given to ventilation. If very bright weather succeed a dull moist period, a slight shade over the roof-lights is very beneficial. A double thickness of herring nets will afford all the shade required, and it is necessary, where the panes of glass are large, especially for Muscats just completing the stoning process.

Late Houses.—Thinning.—In order to secure large and highly finished berries thin them well, especially in the interior of the bunches, leaving the large berried varieties about an inch apart. Only such sorts as Gros Colman, and with the Vines in the best condition, will bear this severe thinning, therefore regard must be had to the variety, its likely ultimate size, and other circumstances, being guided by experience. The oval-berried varieties do not require so much room as the round ones, but all should be thinned, that they will have space for swelling fully without wedging, and yet be so close that when cut the bunch will retain its form. Loose bunches that show the footstalks are not so pleasing in appearance as more compact clusters, however fine the berries may be. Not only is it necessary to thin the berries, but the bunches must be reduced to the number which their size and the condition of the Vines satisfy the grower will finish satisfactorily. If an error is made, let it be on the safe side, as Vines that are over-burdened never finish the fruit well, and it is inferior in keeping qualities.

Firing and Ventilating.—It is one of the greatest mistakes to rely on solar heat alone for forwarding late Grapes. Cold nights render fires necessary; it is folly to let them out now and have to fire hard later on, when the sun has less power, to ripen the fruit. All late Grapes thrive best in a high temperature, with abundant food at the roots, and a genial condition in the atmosphere. Maintain a night temperature of 65°, and 70° to 75° by day in dull weather. Admit air early, a little at the top of the house constantly, increasing the ventilation with the temperature, allowing an advance to 85° or 90°, at which keep through the day from sun heat, reducing the ventilation with the declining sun. Close at 85°, damping the paths and borders then, and again before nightfall. It is well to close for a short time and afterwards admit a little air, which will prevent a vitiated atmosphere, and allow the foliage to dry in the morning as the sun acts on the structure. Avoid cold draughts or sudden depressions of temperature, as they cause rust.

Young Vines.—Syringe copiously in the afternoon of fine days, and close early so as to husband the sun's heat, mulching the border to keep the surface moist, affording water or liquid manure when necessary. Stop laterals to one leaf, then the sub-laterals may be allowed to extend on permanent Vines, but on supernumeraries the canes should be stopped when about 9 inches in length, the laterals at the first leaf and the sub-laterals to one joint as made, keeping them clear of the principal or cane leaves. The latter must be kept free, and allowed to die naturally, so that the buds at the base may be well formed and nourished.

THE BEE-KEEPER.

ATTENTION TO SUPERS.

THROUGHOUT the country where the chief surplus is obtained from field Beans and white Clover, the honey flow will now be at its height, but without fine weather bees cannot store a surplus. During the past three weeks bee-keepers have been favoured with bright sunshine and a high temperature. Bees have made great headway, increasing at a rapid rate. The country, however, was beginning to have a parched appearance, although the wind was in the north-east nearly the whole of the time. The wind has now veered round to the south, and with it came a heavy downpour of rain. This has been beneficial to all growing crops. Bees have received a check, but it only needs fine weather for a bountiful harvest to be stored. It is interesting to note the difference between strong and weak colonies at this season, and inspection shows the advantage of having a given number of stocks strong early in the season.

Supers placed on strong colonies at the end of May, or later, will now require attention. Already we have some perfectly finished sections, better than we have obtained for several years past so early in the season. A fair sample of run honey has also been extracted from supers. This, however, is somewhat brown in colour, as it has been obtained from field Beans. Other colonies which were left to chance are not of sufficient strength to store a surplus.

Stocks supered with a crate of twenty-one sections, and which are partly sealed over, should now be removed, and a crate of empty sections placed underneath. If the weather is dull at this season, the bees will draw out the foundation, and seal over the sections in the top super without loss of time. When a hive is crowded with bees at this date, and the sections are full of honey, the bees will prepare for swarming by forming queen cells if extra space is not provided for them. Timely attention to supers is thus necessary if full benefit is to be obtained from the bees, and this can only be done by providing room in advance of their requirements.

EXTRACTING HONEY.

We recommend all extracted honey to be obtained from supers. In our own apiary we never extract honey from the combs in the brood nest. There are, however, both a right time and a right way of extracting honey. It must never be extracted during the middle of a bright day or in the evening. Early morning is the most suitable time for the purpose. The honey obtained during the previous day will have been removed from the cells in which it was

originally placed, and after being treated by the bees will be ripened. It will then not ferment after storage in bottles, which it often does when extracted in an unripe condition.

In addition to choosing the right time of the day, it is necessary that the combs and honey be in the proper condition. The combs should be old and tough, so that they will not break down in the extractor. The honey must be partly sealed over, as we have found when honey is in this condition it is perfectly ripe, and will keep for any length of time. If early morning is not a suitable time for extracting, another crate of supers may be placed on the hive in the manner recommended for sections.—AN ENGLISH BEE-KEEPER.



- All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Cattleya Mendeli (J. D.).—It is rather difficult to give exact statistics as to number of flowers produced on a single spike of any kind of Orchid, as someone is almost sure to be found beating the record. Five flowers is certainly not a record number for the *C. labiata* species as a whole, whatever it may be for *C. Mendeli*; but we strongly suspect that this number has been often reached. We have had four flowers on a spike of the large flowering *C. M. grandiflora*, and should certainly not be surprised to get five from such excellent growths as yours are, by the measurements sent. We have had seven flowers on *C. gigas*, and six on *C. g. imperialis*.

Begonia Gloire de Lorraine (Puzzled).—Your plants should succeed in the soil you have potted them in if both loam and leaf soil are of the right kind. The probabilities are that your loam is not good. The right kind for this Begonia is good fibrous, mellow, rather light loam, which pulls to pieces easily, and does not form hard lumps when dry. The leaf soil should be only half decayed, perfectly sweet, and be rubbed through a half-inch sieve. Procure loam and leaf soil of the above description, and form a compost of two parts of the former to one of the latter, adding the usual amount of sharp sand and a few lumps of charcoal. Shake the plants out, repot, and grow in an intermediate house, syringing freely till good progress is made, after that only occasionally. If you cannot procure good loam pot entirely in peat, such as Ferns thrive in. A stove temperature is too hot in summer time. You will have no difficulty in succeeding if you follow this treatment.

Discoloured Leaves of Chrysanthemums (Dunkeld).—The leaves are affected with eelworm, *Tylenchus devastatrix*, and by the mycelium of some fungus. It may not have anything to do with the discolouring of the leaves, but is only a consequence of the eelworm attack, this being accompanied by bacterial organisms, causing the clamminess on the destroyed parts. The best treatment under such circumstances is to spray, using an atomiser, with methylated spirit diluted with an equal part of water. The spirit sinks more or less into the affected parts, and destroys the fungoid hyphae as well as the eelworm. Good results also follow syringing with nicotine essence, one part in ninety-six parts water. The thing is to act promptly and give the plants more mineral food, they being very succulent in foliage and deficient in lime. A little superphosphate, three parts, and two parts kainit mixed would do good, using a pinch between the finger and thumb per 10-inch pot, and washing in, or preferably mixed with an equal quantity of soil, sprinkling in after watering. If desired the mixture may be used in liquid form, half an ounce to a gallon of water, and supplied at every alternate watering, or about twice a week for a time.

White "Fungus" on Apple Trees (York).—It is just possible that what you describe as a "white fungus" may be the American blight, the presence of which is indicated by white fluffy masses on the stems. It can be cleaned off with methylated spirit applied with a brush, carbolic soap solution, petroleum emulsion, or Gishurst compound. Perhaps you had better send specimens of the infestation as soon as you read this reply.

Destroying Apple Chermes (D. R.).—The most efficacious wash for the destruction of this pest is one containing sulphuret of lime. This may be made by combining the sulphuret with water, or more conveniently by boiling together sulphur and lime in the proportion of 1 lb. of sulphur and 2 lbs. of lime to 4 gallons of water. Tobacco water also kills them, with or without the addition of Gishurst compound, but the difficulty is to reach the insects, secluded as they are in the blossoms. In fact, not much can be done during the spring, and the time for the destruction of chermes is the winter. Those which are to be the parents of the new brood lodge within cracks of the bark, angles and ridges of twigs, and the like places of shelter, where, however, they may be reached and killed by copious syringing with a hot solution of softsoap.

The Tiger Moth (W. Raby).—The caterpillar you send for identification is that of the tiger moth (fig. 122), which is scientifically known as *Chelonia Caja*. It is one of the commonest caterpillars both in gardens and uncultivated places, its favourite food plants in the latter spots being Docks and Dead Nettles. In the garden it appears most partial to the vegetable quarters, but sometimes appears on the flower beds, and may



FIG. 122.—THE TIGER MOTH.

even be detected feasting on fruit trees or disfiguring a choice *Pelargonium*. The moth has acquired its tigrine name from the markings of the upper wings, which are usually adorned with blue-black spots on a red ground. The head and legs of the caterpillar are black, and the body is covered with long silky hairs.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. O. H.).—1, specimen insufficient, an *Aralia*, probably *leptophylla*; 2, *Aralia Veitchi*; 3, *Sobralia macrantha*. (W. B. R.).—Brilliantly coloured specimens of the Copper Austrian Briar. (T. S.).—1, *Cercis siliquastrum*; 2, *Salisburia adiantifolia*; 3, *Abies Douglasi*. (P. L.).—1, *Viburnum plicatum*; 2, *Hemerocallis flava*; 3, *Cerastium tomentosum*; 4, *Sambucus aurea variegata*; 5, *Salvia argentea*. (C. G. M.).—1, *Selaginella Wildenovi*; 2, *Pteris umbrosa*; 3, *Adiantum trapeziforme*; 4, *Asplenium viviparum*; 5, *Nephrolepis davallioides furcans*; 6, *Woodwardia radicans*. (C. A.).—*Pelargoniums* are florists' flowers, which we cannot undertake to name; send specimens to some large grower, who will name them by comparison. (J. H.).—1, *Masdevallia Davisii*; 2, *M. Lindenii*; 3, *M. ignea*; 4, *M. Harryana*. The small *Odontoglossum* is a very poor form of *Rossi*. *Zephyranthes carinata*. (J. S. U.).—1, *Lithospermum purpureo-cerulea*; 2, *Anemone dichotoma*. (Single W.).—1, *Sisyrinchium striatum*; 2, *Spiraea ulmaria fl.-pl.*; 3, *Centranthus ruber*; 4, *Nigella damascena*. (S. N.).—1, *Tasconia Van-Volkemi*; 2, *Rhynchospermum jasminoides*; 3, *Habrothamnus elegans*; 4, flowers withered; we are endeavouring to expand one of the later buds; 5, *Hoya bella*. (F. S.).—1, *Kerria japonica flore-pleno*; 2, Yellow Austrian Briar; 3, *Genista hispanica*; all excellent specimens.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Secretary, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—Secretary, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' CEPHAN FUND.—Secretary, Mr. Brian Wynne, 8, Danes Inn.

TRADE CATALOGUES RECEIVED.

G. Bunyard & Co., Maidstone.—*Strawberries, Grapes, and Figs.*
M. Raines & Co., 34, Mansell Street, Aldgate, E.C.—*Bulbs and Plants.*
J. Veitch & Sons, Ltd., Chelsea.—*Bulbs for Early Forcing.*

COVENT GARDEN MARKET.—JUNE 28TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per box	1 0	to 1 6	Melons	1 0	to 3 0
Apples, Tasmanian, per case... ..	13 0	20 0	Nectarines, per doz. ...	6 0	12 0
Cherries, $\frac{1}{2}$ sieve	6 0	10 0	Peaches, per doz.	3 0	15 0
Figs, green, per doz. ...	3 0	6 0	Pines, St. Michael's, each	3 0	8 0
Gooseberries, $\frac{1}{2}$ sieve ...	2 9	0 0	Plums, per box... ..	1 6	2 0
Grapes, black	1 0	3 0	Strawberries, hothouse, lb.	1 6	3 0
Lemons, case	14 0	36 0	„ outdoor, bskt. about 6 lbs. ...	2 0	3 0

REMARKS.—Markets good.

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s.	d.	s.	d.				s.	d.	s.	d.	
Artichokes, green, doz. ...	1	0	to	2	0	Lettuce, doz. ...	...	1	3	to	0	0
Asparagus, per 100 ...	1	0		3	6	Mushrooms, lb....	...	0	6		1	0
Beans, per lb. ...	0	3		0	6	Mustard and Cress, punnet	...	0	2		0	0
„ Longpods, $\frac{1}{2}$ bushel	1	6		2	0	Onions, bag, about 1 cwt.	...	5	6		0	0
Beet, Red, doz.	1	0		0	0	Parsley, doz. bunches	...	2	0		6	0
Cabbages, per tally ...	7	0		10	0	Peas, per bushel	...	5	0		6	0
Carrots, bunch ...	0	6		0	0	Potatoes, cwt. ...	...	2	0		6	0
Cauliflowers, doz. ...	4	0		6	0	„ new ...	...	9	0		11	6
Celery, n-w, per bundle ...	1	9		0	0	Shallots, lb. ...	...	0	3		0	0
Cucumbers... ..	0	4		0	0	Spinach, per bushel...	...	2	6		4	0
Endive, doz.	1	3		1	6	Tomatoes, lb. ...	...	0	4		0	6
Herbs, bunch ...	0	3		0	0	Turnips, bunch...	...	0	3		0	4
Leeks, bunch ...	0	2		0	0	Vegetable Marrows, doz.	...	2	6		3	6

REMARKS.—Markets fair. Asparagus, arrival heavy; trade bad for medium samples

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	1 6	to 2 0	Lily of the Valley, 12 sprays	0 4	to 1 0
Arums	3 0	4 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch...	2 0	2 6	Maidenhair Fern, doz.		
Azalea, white, doz. bnchs.	3 0	4 0	bnchs.	4 0	6 0
Carnations, 12 blooms ...	1 6	3 0	Mignonette, doz. bunches	4 0	6 0
Daffodils, single yellow,			Narcissus, doz. bnchs. ...	1 0	2 0
bch. 12 blooms	0 6	0 8	Orchids, var., doz. blooms	1 6	9 0
Daffodils, double, bunches	0 4	0 6	Pelargoniums, doz. bnchs.	4 0	6 0
Eucharis, doz.	2 0	3 0	Paeonies, doz. bnchs. ...	4 0	8 0
Freesia, doz. bnchs. ...	2 0	3 0	Roses (indoor), doz....	2 0	3 0
Gardenias, doz.	1 0	2 0	„ Red, doz....	2 0	4 0
Geranium, scarlet, doz.			„ Tea, white, doz. ...	2 0	3 0
bnchs.	4 0	6 0	„ Yellow, doz. (Perles)	2 0	3 0
Hyacinths, Roman, bunch	0 4	0 6	„ Safrano, doz. ..	2 0	2 6
Iris, per doz. bunches ...	6 0	12 0	Smilax, bunch	3 0	4 0
Lilium Harrisii, 12 blooms	3 0	4 0	Tulips, bunch	0 4	0 6
„ longiflorum, 12 blooms	4 0	6 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Foliage plants, var., each	1 0 to 5 0
Aspidistra, doz. ...	18	0	36 0	Fuchsias, doz. ...	4 0 6 0
Aspidistra, specimen ...	5	0	10 6	Heliotropes, doz. ...	4 0 6 0
Boronia ...	12	0	18 0	Hydrangeas ...	6 0 10 0
Crotons, doz. ...	18	0	24 0	Lilium Harrisii, doz. ...	12 0 18 0
Dracæna, var., doz. ...	12	0	30 0	Lycopodiums, doz. ...	3 0 4 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	6 0 8 0
Erica various, doz. ...	9	0	24 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., each ...	1 0 15 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens ...	21 0 63 0
Ferns, var., doz. ...	4	0	18 0	Pelargoniums, scarlet, doz.	4 0 6 0
„ small, 100 ...	4	0	8 0	Solanums, doz. ...	6 0 12 0
Ficus elastica, each ...	1	0	7 0	Stocks... ..	4 0 6 0

Bedding out plants in variety from 3s. doz.



AGRICULTURAL RETURNS FOR 1898.

TRUTH lies at the bottom of a deep well, and is therefore a most difficult thing to get at. It is not that people mean to prevaricate. No, not at all, but they are apt to look at things through their own spectacles, and their own spectacles so often distort.

Dine at a market ordinary on a busy day, lay yourself out to gather information from the various farmers present. Every class will be represented—the gentleman farmer, who is combining pleasure with

business; the noted breeder of some special line of stock; the man given over to Potatoes and Wheat, and the smaller farmer whose sons probably stand in as labourers, and whose daughters make dairy work and poultry rearing a ready means to pay all the household bills. Question these men on their prospects, or rather on the general prospects of the neighbourhood, and you will be astonished at the diversity of their answers. Possibly all will have a bit of a grumble, but as their various holdings are essentially dissimilar, so will be their views of the situation.

To arrive at a right estimate of things in general, there is nothing that will beat Government statistics. They cover a wide range, in fact all the range, and are compiled from reliable sources, and there is no bias either one way or the other.

What 1899 will show as regards a Wheat area we are not in a position to tell, but we cannot be surprised that the improvement in the price of Wheat caused a very much increased acreage to be sown in 1898. In the last quarter of 1897 the price of Wheat was 33s. 3l., in the first quarter of 1898 35s. 1d. as against a yearly average ranging in 1893-96 from 22s. 10d. to 26s. 4d. We began to hope at last the tide had turned, and so we find that 213,000 acres, or 11·3 per cent. were sown additionally. In 1895 we had gone to our lowest point, we are now getting into a more normal state. The greatest increase has been in Lincolnshire and the North Riding of Yorkshire. As a good deal of spring Wheat was put in, of course there was less available acreage for Barley, and very little bare fallow was to be found at all.

We do not quite understand the reason for the falling off in horse breeding. Is it because we find it cheaper to import than to breed, or do we fail to breed the right sort? We fancy too many farmers are so living, as it were, from hand to mouth, that they dare not risk anything in so precarious a vocation. At any rate, we are 4400 short on last year, that is for unbroken young horses. We do not quite like this. Hitherto we have considered our English hunters, coach, hackney, and Shires as the pick of the markets, and we are very loth to hear of the supremacy of the foreigner. Why is it we are relinquishing, one by one, our specialities?

However, if horse breeding appears to have received a check, the same cannot be said of horned cattle. The increase is very marked—namely, 122,000. But we have not yet risen to the numbers in 1871-75. Then the proportion was 134 for every 1000 inhabitants; in 1897 it was 112 for every 1000; now it is 113 for every 1000. There are more cows than in any year since 1892, and this is a most hopeful sign, in face of all the scare of tuberculosis. We now estimate there are seventy-three cows to supply milk for each set of 1000 people.

Sheep are looking up again, with an increase of 403,000. In 1891-92 they appear to have reached their highest point. Since 1895 the flocks of breeding ewes have been steadily increasing, and this in the face of the tons of frozen mutton and lamb from abroad.

The landlord, too, has entered on to better times—at least so we judge, when we find the landlords, as a body, are farming only $4\frac{1}{2}$ millions of acres out of $32\frac{1}{2}$ millions. It is, we fancy, an easier thing to receive rents than to make them, especially when so much of the profit has to go out in payment to overlookers and bailiffs. We do not wish to hint that these men are overpaid, but farming will not stand any extra expense, and the tenant or landlord, as the case may be, should be his own manager.

There is one item we are very sorry to see, and that is the immense Barley bill—£24,800,000 for Barley!—and our own Barley land going out of cultivation. There is something rotten in the state of England, my masters, if this be the case. Of course this is not all malting Barley, there must be thousands of tons of small thin stuff of inferior foreign quality used for feeding purposes, possibly used in a great measure in corn cakes.

The import of Maize, too, is on the increase, but as a set off we find that we have imported 160,000 tons less butter, 13,000 tons less cheese, and less margarine and eggs, 45,000 tons instead of 65,000 in 1892. We begin to think the preachers have not altogether preached

in vain if our national supply of butter is on the increase; it means, too, that it must be of a better quality, and that is a pleasant and good sign.

For fruit, vegetables, and dead meat our bill with the foreigner amounts to £141,000,000. What a hungry people we are! The best customers in the world, and paying with good solid English sovereigns. It must be a sign of national prosperity, as the stomach generally feels the first pinch when times are hard. We cannot forget the Barley bill, we do not like it; and we should be glad if wiser heads than ours could suggest some remedy. We find no fault with importations that we cannot produce; but this is a different question; we have the land, we have the men, and we ask only for a living profit.

WORK ON THE HOME FARM.

We have had a splendid rain at last, and the troubles of the strong land farmer are somewhat palliated, if not altogether removed.

The later Turnips can now be put in with a fair prospect; the land is both warm and moist, and Turnips sown at once should be quickly up. We are sorry to say that many fields have been visited by the fly, and the land which it was hoped would produce a fine crop of Swedes will have to be resown with common Turnips.

This, besides entailing more labour, is a serious loss, for the Swedes will be much missed, both in the stockyard and by the feeding sheep, whilst if there should be a severe winter the white-fleshed Turnips may soon be rendered absolutely useless. Potatoes are growing very quickly, and the earthing-up process is very much improved by the rain. Lately the soil has been so dry that it would not remain up, but fell back into the furrow. This portion of the field must be done over again, as we like to see Potatoes well earthed up.

The rain, which is so welcome everywhere else, is inopportune for the many farmers who now have their hay down. Fortunately the rainfall has come all at once without any drying intervals, so perhaps not much harm will have been done. The crop is not a large one, but is good in quality, so it would be a great pity if it were spoilt; besides, as Swedes may be scarce articles, the hay crop will become of still greater importance. Mangolds have grown very well where it has been possible to keep a loose surface; they should now be quite safe, and be the root crop of the season.

Wheat is rapidly coming into ear, and looks very well everywhere, but both Barley and Oats are hardly so satisfactory as they should be. Some fields of ideal and well farmed Barley soil look well, but many pieces of strong, or even only approaching strong land have done very little during the last three weeks, and barely hide the ground from view. Whether they can recover seems to be very dubious, and Barleys must be deficient both in quantity and quality. Oats, too, will be short in the straw, and that always means light of grain. Pastures are very bare, but stock has done well.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1899.	June.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	18	29·846	65·0	59·2	S.W.	63·2	75·1	53·2	115·8	47·4	0·080
Monday	19	29·688	59·2	52·8	N.	62·9	69·9	50·6	124·8	47·8	0·238
Tuesday	20	29·407	61·6	59·9	S.E.	62·2	73·8	56·6	102·1	54·9	—
Wednesday	21	29·530	64·9	58·0	S.E.	61·9	75·9	55·8	123·9	51·0	—
Thursday	22	29·657	64·8	59·6	N.	62·0	68·2	56·6	88·9	52·4	0·153
Friday	23	29·850	59·1	56·1	E.	61·0	67·1	54·8	88·1	53·9	—
Saturday	24	30·042	63·6	57·1	N.W.	60·4	74·1	55·2	118·7	52·6	—
		29·717	62·6	57·5		61·9	72·0	54·7	108·9	51·4	0·471

REMARKS.

- 18th.—Sunshine all morning, generally cloudy in afternoon, rain from 8 P.M. to midnight.
 19th.—Alternate cloud and sun in morning; generally cloudy after noon.
 20th.—Rain from 0 A.M. to 4 A.M., and overcast and showery to 10 A.M., then generally cloudy till 4 P.M., and bright after.
 21st.—Overcast early, cloudy morning, generally bright from 1 P.M.
 22nd.—Overcast early, sprinkles of rain from 10 A.M., steady rain from 0.30 to 3.30 P.M., and showers later.
 23rd.—Overcast throughout but for a gleam of sun at noon.
 24th.—Overcast morning, sunny afternoon.
 A fine week, but with a little very welcome rain.—G. J. SYMONS.

